

Railway Age

Vol. 88, No. 16

April 19, 1930

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Tendencies That Demand Attention

THE bad business conditions which at present are making the total and net earnings of the railways so unsatisfactory will soon pass, but the more enduring influences which are determining railway financial results over long periods demand careful study and consideration. Traffic and earnings in peak years should be compared of course, with those in other peak years, and traffic and earnings in poor years should be compared with those in other poor years in order to determine prevailing influences and the present and prospective effects of those influences.

Before the war a "peak" year was one in which total earnings were larger than ever before. Every year in which general business was good was then a peak year in this sense. The first year of good business after the depression which began in the latter part of 1920 was 1923, and in that year total earnings were the largest up to that time. The total earnings of 1926 exceeded those of 1923. In the year 1929 freight business exceeded all previous records, but it was not a peak year in the pre-war sense, because, in spite of the inclusion of a large amount of back mail pay, total earnings were less than in either 1923 or 1926.

Apparently last year was the first in history when the railways of the United States handled a record-breaking freight business without getting total operating revenues exceeding those of any previous year. The explanation is to be found in two facts. One of these is the large decline of earnings from passenger business that has been occurring. The other is that freight business has not increased as fast in proportion since the war as before. The consequence in 1929 was that the railways did not do as well financially as in 1926, the last previous year of record freight business. They have never earned the "fair return" to which they have been entitled under the Transportation act, but it has been hoped that the percentage of return earned by them in each year of record freight business would show an increase, until finally, at least in good years, they would earn a fair return. Excluding almost 40 million dollars of back mail pay which was credited to their operating revenues, the Class I roads earned an average return on their property investment

last year of only about 4.8 per cent, as compared with approximately 5 per cent in 1926.

Earnings and Expenses in 1930

The year 1930 has begun with a further decline of passenger business and a sharp decline of freight business, and we are beginning to see what kind of results the railways produce when subject to the present prevailing influences in a year of poor business. In the first two months of 1930 their total earnings were smaller than in the first two months of any previous year since 1922. They were only \$879,000,000, or \$84,500,000 less than in the corresponding part of 1929, \$70,500,000 less than in the corresponding part of 1923, seven years before, and \$66,000,000 less than they averaged in the preceding seven years. Their operating expenses also were less than in the first two months of any year since 1922, being \$33,000,000 less than in the first two months of 1929, \$53,000,000 less than in 1926, \$98,000,000 less than in 1923, and \$57,000,000 less than they averaged in the preceding seven years.

In spite of the fact that these large reductions of operating expenses have been effected, the net operating income earned in the first two months of 1930 was about \$45,700,000 less than in the first two months of 1929, \$14,000,000 less than it averaged in the seven preceding years and only \$15,000,000 greater than in 1923. The net increase in their investment in railway property since 1923 has been about \$4,000,000,000. Using this largely increased investment as a basis for computation results in showing net return being earned thus far this year at the lowest annual rate since 1922.

Whatever mistakes the managements of the railways may have made, they cannot be justly criticized for the comparatively unsatisfactory financial results obtained in 1929, and the very poor financial results being reported now. They have greatly improved transportation service within recent years, and meantime have effected huge economies in operation. Although wages have been steadily advanced and a record-breaking volume of freight business was handled last year, the operating expenses of the Class I roads were \$161,000,000 less than in 1926, and \$390,000,000 less than in

tion from those who determine the government's trans-business since the war. The principal trouble with the railways recently has been that they have been suffering from a lack of business. Motor vehicles on highways have taken away one-third of their passenger business. They might have effected larger economies in passenger train service than they have, but it has been impracticable to reduce passenger expenses enough to offset the loss of business. They have needed a larger increase of freight business than they have secured to compensate for the loss of passenger business; and now it is proposed that the government shall develop an extensive system of inland waterways, which, if it accomplishes its purpose, will divert a large amount of freight business from them.

When Business Revives

There will be an increase of freight business after the present depression passes, but how large will it be? Will it be large enough to offset the apparently interminable loss of passenger business? It was not between 1923 and 1929, and in consequence total railway earnings were smaller in 1929 than in either 1923 or 1926. Will they be smaller in future years of record freight business than they were in 1929?

The railways are and will be for many years the country's most essential means of transportation. The kind of service they will be able to render will depend upon the way they are able to maintain and improve their properties, and this will depend upon their total and net earnings. Undoubtedly economies in operation will continue to be made, but will total earnings be sufficient to enable the economies effected to result in the earning of an adequate net return? Whatever may be the merits of motor vehicle transportation, it is a fact that the construction and maintenance of highways by the government has made it possible for motor vehicles to take a vast amount of passenger business from the railways. Whatever may be the merits of inland water transportation, it is a certainty that if the government's policy of developing inland waterways is successful it will result in a large amount of freight being carried by water that otherwise would be carried by rail, and thus restrict the increase of total railway earnings.

The government's policy of subsidizing competition with the railways is becoming as serious a menace to their earning power as its policy of regulating their rates. A reasonable optimism is desirable; but an unreasonable optimism is foolish. The financial results of railway operation in 1929, a year of record freight business, and thus far in 1930, a year of depression, have been such that they should cause real concern to railway managements, business men and government officials. The time to try to arrest evil tendencies is when they become evident—not after they have produced their natural results. The prevailing tendencies in the railroad industry in both good and poor years since 1926 have been unsatisfactory, and demand atten-

tion from those who determine the government's transportation policy, as well as from railway financiers and officers.

How Train Traffic Men for Public Relations Duties?

THE opinion that traffic solicitors, in addition to their direct duties of securing business, should also be equipped as public relations emissaries of the railroads seems to be attracting considerable interest. This idea, which has been discussed from time to time in these pages, was the central theme of a forceful address by H. G. Taylor of the Car Service Division before the Traffic Club of New York a few weeks ago. In last week's *Railway Age* a correspondent discussed in some detail the advantages of training traffic men for work of this kind. While further consideration of the proposal would doubtless still further clarify the problem involved, it seems that the central idea is already fairly well defined. In short, the time is opportune for an actual experiment. A leader is needed—one who will give the proposal a real trial and make the results of his experience available to the railroad industry.

Fortunately, the idea is evolutionary and not revolutionary—it is not necessary to risk anything beyond some time and effort and a very little money against potential gains of great importance to the railroads. A public relations officer with a knowledge of traffic department problems or a traffic officer with an understanding of public relations, either one with a knowledge of the fundamentals of railway economics, could outline and supervise a plan for offering to ambitious traffic department men the kind of training which would fit them for larger service.

Conceivably a satisfactory beginning might be made in some metropolitan area where there are a relatively large number of traffic representatives. In such a location a series of addresses could be arranged which would cover rather thoroughly the more important phases of the present transportation situation. The addresses could be scheduled for alternate weeks, with an intervening session given over to a forum discussion of the preceding lecture or of prescribed reading in books and periodicals. The tone of the meetings should not, of course, be that of the class room, but the taking of notes and the submission of written reports by participants might be utilized to insure a general assimilation of the material presented. Addresses given in such a course might later be printed in booklet form for the benefit of men stationed at outlying points who could not attend the meetings.

It is not our intention herein to suggest a concrete plan, however; that could be done with any degree of

success only by giving full consideration to local conditions where the plan was to be applied. Rather we desire to point out the facility with which such a plan could be prepared and put into operation if some active protagonist for it could be found.

The purpose of such training, of course, would be to extend and intensify the excellent public relations work now done by the railroads. The really important public opinion regarding the railroads is that of the large shippers, and the direct contact which the railroads have with these men is largely through their traffic representatives. Relying on the belief that understanding follows knowledge, it seems logical that traffic representatives have great potential value to the railroads as interpreters and spokesmen of the railroad point of view. We need to make an effort to find an effective means of imparting to them the information they will require in this work. An opportunity exists for someone, by experimenting to find the best method for this purpose, to perform a valuable service for the railroad industry.

Can Highway Transport Stand on Its Own Feet?

WIDESPREAD publicity in eastern newspapers has recently been given the proposal to construct a high-speed toll highway between New York City and New Haven, Conn. In this connection an act to incorporate the New York & New England Motorways Corporation has been introduced in the New York legislature and the pending bill explains the plans of the corporation. While the ultimate objective is a New York-Boston high-speed highway, definite proposals are confined at present to the New York-New Haven section.

Briefly the plan is to construct a four-track highway on a new right of way adjacent to that of the New York, New Haven & Hartford Railroad. It is not intended to attempt construction over the New Haven tracks except where acquisition of the adjacent right of way would not be feasible. It is also proposed to convert present rail stations along the route into combination rail-highway stations. In return for agreement to this latter the New Haven would be granted exclusive rights to operate motor coaches over the new highway. While it is contemplated that the highway would be built by private capital, the bill provides for recapture by the states involved if the authorities later desire to incorporate the road into the public highway system.

The New York Herald-Tribune, in an editorial on April 7, expresses the opinion that "The motor toll road may well prove the solution of two vexing problems that have come into being with the rapid develop-

ment of motor transportation. One has to do with the danger to life and limb involved in permitting high-speed through traffic to add to the congestion of our highways and the other with the increasing use of these highways by commercial carriers in competition with the railroads." The editorial next considers the recent growth of motor coach and motor truck lines, and holds that these utilities, operating over the public highways "pay little or nothing for the privilege."

"In the meantime," it continues, "the railroads, compelled to buy and construct their own rights of way and to pay a heavy tax to the state on such property, are losing an increasing amount of business every year to these exploiters of the free highway. From the point of view of justice or from that of the economic welfare of society the system cries for a remedy. It amounts to the grant of a state subsidy to one form of transportation in its efforts to ruin another."

Statements along the line of the foregoing are frequently made, but proponents of highway transportation as often reply with an array of figures purporting to show that total motor vehicle taxes are sufficient to pay the nation's highway bill. The question thus remains in controversy.

It would seem, however, that the present proposal holds the possibility of determining whether highway transportation could pay its total cost and still survive in competition with railways. If sufficient private capital could be attracted to construct the proposed road and if the completed project is able to attract sufficient patronage to pay maintenance costs, taxes and a reasonable return upon such capital then the question of actual highway transport costs would no longer be in dispute.

The test would be interesting. Moreover, it would provide authoritative data as to actual costs of highway transportation which should be an invaluable guide toward a sound policy of taxation for commercial use of public highways.

Reliability and Waterways

THE annual report of the Inland Waterways Corporation for the year 1929, recently issued, summarizes one of the strongest arguments which can be made against the proposed widespread development of inland waterways. The federal barge line suffered, in the last year, a net loss of \$354,000, without considering at all any return upon its \$17,000,000 investment in property and equipment. While railway tonnage transported last year showed an increase of four per cent over 1928, barge line tonnage showed a loss of six per cent. While the operating ratio of the railways declined from 72.41 per cent to 71.69 per cent, the operating ratio of the barge line increased from 94.32 per cent to 100.89 per cent. But these are details. Unfavor-

able as these details may be to the legally established purpose of the Inland Waterways Corporation—to indicate to private capital the feasibility of profitable waterway operation—much more important to the public is the conclusion suggested by the report of the inability of carriers on inland waterways to furnish dependable transportation.

Operation on the Upper Mississippi

As regards operation on the upper Mississippi, the report states:

"Navigation was suspended from November 15, 1928, to March 15, 1929, on account of ice. The rainfall during the months of May and June was very deficient and by mid-June we were beginning to have trouble on account of low water. Owing to lack of rainfall, the river stage between Minneapolis and Prescott was continually below the zero mark of the engineers, and at times there were but three feet of water in the channel. During this period of low water in July, we found our steamers and barges were continually grounding. * * * This trouble will be obviated when the dam at Hastings, now under construction, has been completed.

"The month of August was marked by severe misfortunes. Very low water prevailed, and on August 3 steamer Wynoka struck a rock in the center of the channel below the gates of the Moline lock and punctured a hole in the hull some two or three feet in diameter, with the result that she immediately began to sink, and it was only by great good fortune that we were able to keep her afloat until we were able to get her into dry dock at Keokuk. * * * Reference to the operating chart for the month of August discloses the very bad channel conditions prevailing in Calhoun county, with the result that all our steamers passing through this area between Quincy and St. Louis were continually going aground and experiencing great delays and piling up expenses which might have been entirely avoided had the channel been completed and maintained in proper condition. * * *

"Our greatest misfortune during the month of August, however, occurred on the nineteenth when the lower gates of the lock at the high dam between the cities of St. Paul and Minneapolis gave way, permitting all the water above the dam to escape and leaving the steamer Altair and six barges hopelessly stranded at the Minneapolis terminal."

Nor was the upper Mississippi division of the barge line alone in its difficulties. As regards the lower Mississippi division, the report says:

"Within the last five months of 1929 we encountered every detrimental navigating element presented in the almost eleven earlier years of operation and in an aggravated degree, resulting in serious interruptions to service and revival of the service complaints which had been almost entirely eliminated. However, the harmful effect was minimized by prompt notice to our shippers of the channel difficulties and the announced acceptance of freight subject to delay.

"The inadequate channel was comparable to 1922 with the exception that in 1929 a far greater area was involved and the duration of the low-water period was almost twice as great.

"In 1929 the detention to line vessels in active service directly chargeable to fog and unavoidable channel obstructions was as follows:

Month	Hours
August	1,913
September	3,356
October	3,323
November	743
December	2,047

"Ice closed the St. Louis harbor almost an entire month earlier than usual."

While the Mississippi divisions were suffering from the virtual disappearance of their right-of-way, the

Warrior division was encountering transportation difficulties which have been with us since the time of Noah. The report continues:

"On the Warrior river we experienced the greatest flood period in our career, considerably slowing up operations. Normal tows of seven barges had to be reduced to two and three barges, in order that the power might carry them upstream. These floods even penetrated our terminals at Birmingham, supposed to be above high-water mark, to a depth of 6 to 10 in., doing considerable damage to freight in transit in the terminal."

Water Versus Rail Service

It has never been demonstrated that transportation costs on the Inland Waterways Corporation, including the hidden charges borne by the taxpayers, are lower than corresponding rail charges. In fact, all available evidence indicates the contrary. But ignoring relative costs, what of relative service?

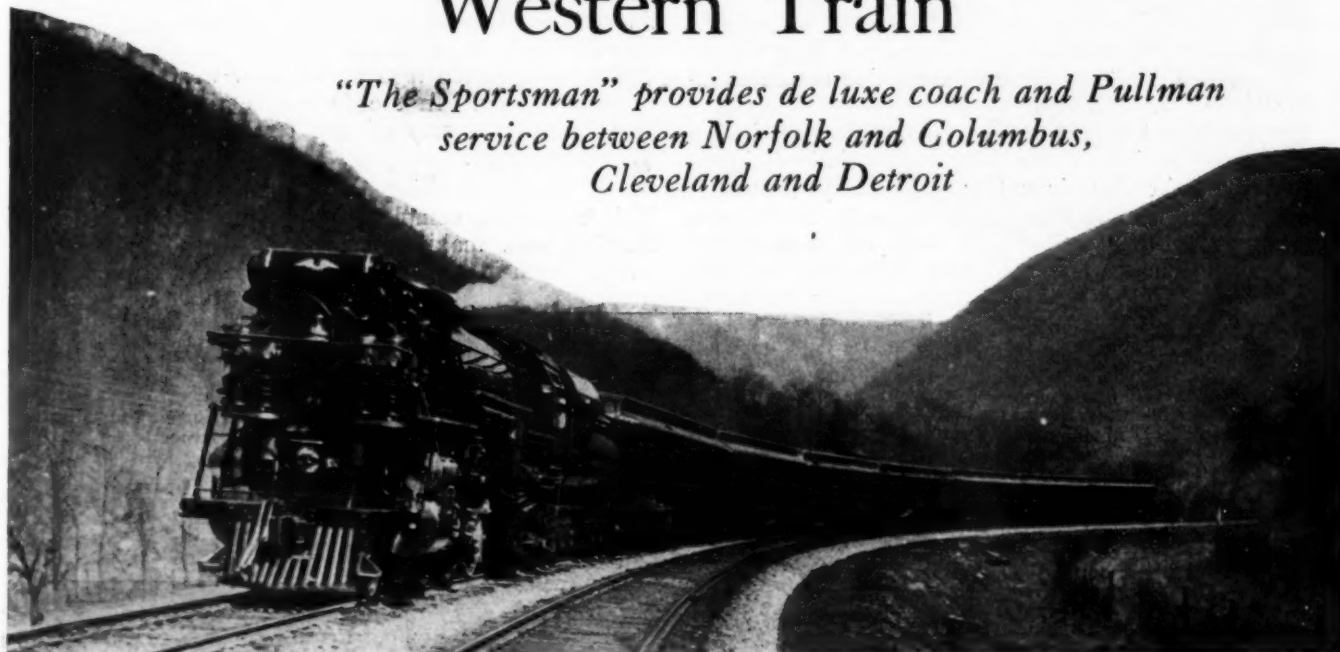
In the present highly developed state of our national industrial and commercial structure, adequate and reliable service are two fundamentals absolutely essential in an efficient transportation system. These the railways provide; these, on the record, the barge line has failed to provide. This failure is no fault of the Inland Waterways Corporation. It is a fundamental and characteristic weakness inherent in practically every inland waterway, river or canal, in the United States. Ice, low water, high water—engineering science has been marvelously developed, but not to the stage where it can lower the freezing point or turn rainfall on and off.

The federal administration's announced policy contemplates widespread waterway development where such development is "economically justified." The element of cost is one of the most important factors in the determination of "economic justification." But in addition, the conditions disclosed by the Inland Waterways Corporation's annual report—conditions which may be duplicated this year or the next or the next—indicate conclusively that in determining "economic justification" the inability of the waterways, from natural causes, to furnish adequate and reliable service must receive the most careful consideration.

When carriers on inland waterways can and do operate they take freight from the railways. When water carriers cannot operate, the railways must be prepared to handle the freight that otherwise would move by water, or they will be criticized by the public for failing to meet the demands upon them. From what source are the railways to get the revenues necessary to pay a return upon the investment in surplus capacity which they must provide in order to be prepared to handle the extra traffic when the waterways cannot handle it? The development of waterways a large part of which are closed in cold weather, and which are unreliable even in warm weather, involves a wasteful duplication of means of transportation for which the public must pay partly in taxes and partly in unnecessarily high freight rates.

C. & O. Inaugurates New Western Train

"The Sportsman" provides de luxe coach and Pullman service between Norfolk and Columbus, Cleveland and Detroit.



THROUGH passenger service between Norfolk, Va., Newport News and Richmond on the east and Columbus, Ohio, Toledo, Cleveland and Detroit, Mich., on the west was inaugurated by the Chesapeake & Ohio on March 30 when the new train, known as "The Sportsman," operating daily in each direction, was placed in service. The schedules of the new train are so arranged that the daylight runs in both directions are made on the eastern portion of the route where the scenic beauties of the Allegheny and Blue Ridge Mountains and the Piedmont Valley may be enjoyed by its patrons. The route is via the Chesapeake & Ohio from Newport News to Columbus; via the Hocking Valley between Columbus and Toledo, and via the Pere Marquette between Toledo and Detroit. Sleeping car service to Cleveland, Ohio, will also be provided via the Nickel Plate to Fostoria, Ohio.

The train will be made up of a combination baggage and smoking car, a salon car, a standard dining car east of Ashland, Ky., a club dining car between Detroit and Ashland, and the sleeping cars. Sleeping-car service is provided between Detroit and Old Point Comfort, Va.; between Cleveland and Hot Springs, Va.; between Toledo and Charleston, W. Va., the latter car

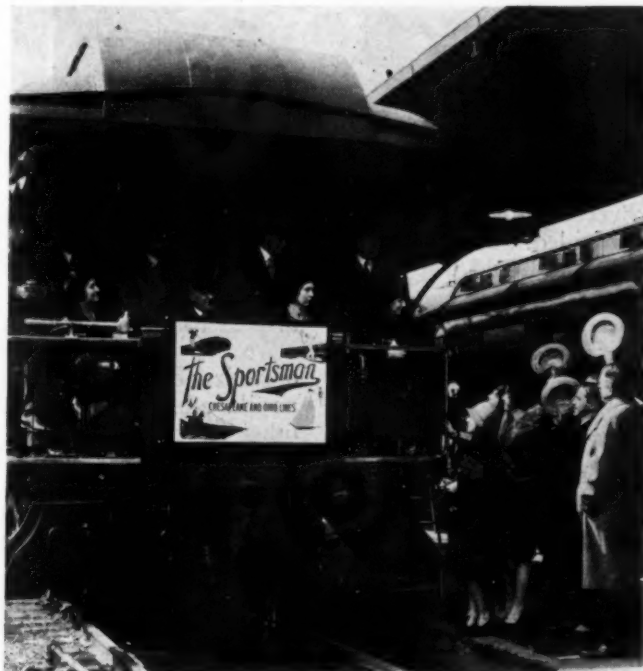
also serving Ashland and Huntington, and between Columbus and Charleston, also serving Ashland and Huntington.

An eight-section observation car operates between Detroit and Old Point Comfort. This car is equipped with a special Majestic radio set which is said to be free from interference from passing trains or when passing through tunnels. The car with open observation platform will ultimately be replaced with an observation-solarium car.

Several unusual features are embodied in the furnishings and appointments of the equipment provided for the new trains. The usual type of day coach has been

replaced with a so-called salon car which is fitted with seats built by the American Car & Foundry Company with individual backs and arms and double spring cushions which are of unusual width. These seats are arranged in pairs on one side of the car and singly on the other side and may be reversed by turning about on a vertical axis. The double seats are 49 in. wide overall and the single seats 26 in. in width. In addition to revolving, the seats may be tilted to 22 deg.

This arrangement provides a seating capacity in the salon cars of 48 persons, 32 on one side of the aisle and 16 on the



other, and provides for an aisle 30 in. wide. This arrangement, which reduces the seating capacity of the car by about one quarter as compared with a similar car equipped with the customary double coach seats, has been adopted because of the fact that as much as three quarters of the seating capacity in through trains is seldom occupied, leaving ample opportunity for an increase in the average number of seats occupied, should the more attractive accommodations increase the coach patronage.

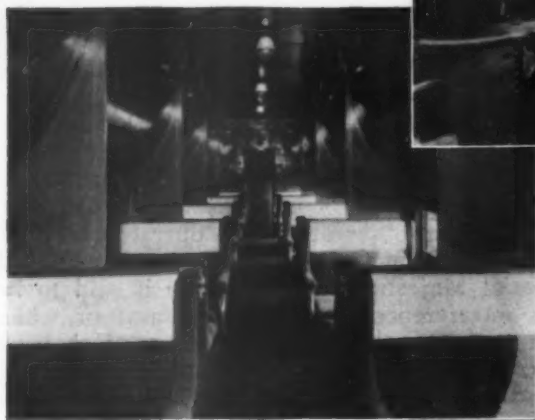
The combination smoking car is fitted with double revolving seats of the individual type, specially designed and built by the American Car & Foundry Company, with a center arm in the middle of each double seat which may be dropped. These seats are upholstered in genuine Spanish leather. The floors of both the

leather upholstering, however, has been done in three colors, eight of the chairs in blue, eight in red and eight in gold. The chairs of the three colors are arranged indiscriminately about the tables in the dining room, producing an effect of richness without the formal stiffness which is ordinarily produced by the limitations of table arrangement in the long and narrow dining room of the car.

The illuminated sign at the rear of the train is of unusual design. In the four corners are illustrations typifying the sports of the territory through which the train passes.

On March 17, prior to the inauguration of the new train service, a complete train left Detroit for an exhibition run, making twenty stops at points on the route which it was to serve. These stops varied from

Below: The Sleeping Cars Are Completely Modern



Left: Interior of the Club Diner



Right: The Salon Car



Above: The Smoking Car

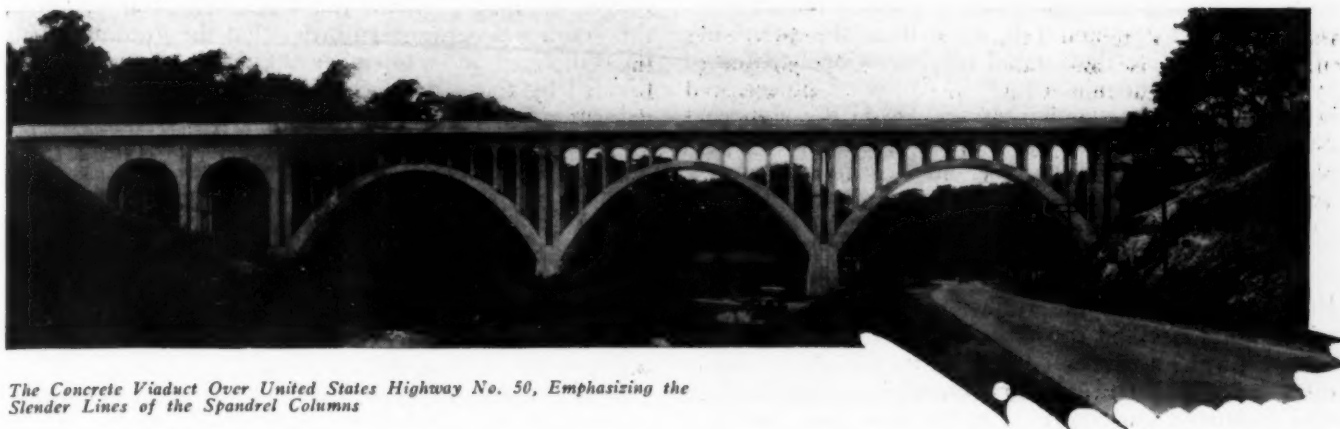
smoking and salon cars are covered with rubber block tiling. Velvet aisle strips are provided. The lavatories in both cars are provided with hot and cold water, and both cars are fitted with ceiling fans.

The sides and ceilings of these cars are finished in gray tones. The upholstery of the salon cars is in figured blue, and the figured aisle strips are in blue of a slightly lighter tone.

The club diners which will serve the patrons on the western end of the route are each provided with a dining room seating 24 persons and a lounge room with seats for 14. To add a touch of distinction to the dining room by relieving the monotony produced by uniformity in the treatment of the upholstery, the chairs are modeled after those in the Ritz-Carlton restaurant in New York. All exposed framework of the chairs is finished in gold with black striping. The

three hours to a complete day and evening, and in the ten days taken to cover the route it was visited by approximately 100,000 persons, of whom, incidentally, something more than one half also took the opportunity to pass through the locomotive cab. Some of the stops were the occasions for ceremonies on the part of local organizations. Schools were closed in order that the pupils might inspect the train. The governors and other officials of West Virginia and Virginia were among those who visited the train at Charleston and Richmond, respectively.

Eastbound, The Sportsman leaves Detroit at 6:15 p.m. eastern time, arriving at Old Point Comfort at 4:30 p.m. and Norfolk at 4:58 p.m. the following afternoon. Westbound, passengers leave Norfolk at 9:00 a.m. and Old Point Comfort at 9:15 a.m., arriving at Detroit at 8:20 a.m. the following morning.



The Concrete Viaduct Over United States Highway No. 50, Emphasizing the Slender Lines of the Spandrel Columns

New K. C. S. Line Completes Ownership to Gulf Ports

*Heavy grades eliminated by 13.27 miles of new line
involving several large structures*

ON November 29, 1929, the Kansas City Southern opened a new line 13.27 miles long between Grandview, Mo., and Leeds, near Kansas City, Mo., the completion of which by the Kansas City & Grandview, a subsidiary, gives the Kansas City Southern unbroken ownership of the shortest rail route from Kansas City to the Gulf of Mexico at Port Arthur, Tex., and to Beaumont, and Orange, and Lake Charles, La. At the time of the completion of the Kansas City Southern in 1897, a gap of 11 miles was left between Grandview, which is located in the highland a few miles south of the Missouri river, and the terminal trackage serving Kansas City, which is situated in what is known as the Blue River bottoms. To bridge this gap, trackage rights were secured over a line already in existence.

During the early years of operation, the district between Kansas City and Pittsburg, Kan., had a ruling grade of 1 per cent, with the exception of this joint

trackage on which a 1.6 per cent grade 4.5 miles long opposed southbound traffic. By the use of helper engines, traffic was handled satisfactorily until a grade revision program was carried out in 1912, which reduced the maximum grade to 0.5 per cent between Grandview and Pittsburg, Kan., the first freight division point south of Kansas City. As this reduction permitted the heavier loading of all trains and added to the difficulty of operating over the 1.6 per cent grade of the leased line, a study was made which indicated the feasibility of constructing a line that would conform to the ruling grade on the remainder of the district.

It was desirable, also, that ownership of the entire line be acquired, and this was one of the deciding factors in determining upon the construction of the new line. Furthermore, in view of a steadily increasing traffic, the various operating advantages which it afforded, such as the release of helper service, the bal-



A View of the New Line, Showing Two Highway Grade Separations and One Railway Grade Separation

anced loading of tonnage trains, a marked reduction in curvature and rise and fall, as well as the possibility of securing a line that would not be seriously affected by high water difficulties such as had been experienced in recent years on the joint track, made the construction of the new line very attractive. Plans for the project were adopted, therefore, and construction work started in August, 1928.

Characteristics of the New Line

The improvements effected in the completed line include reductions of the ruling grade to 0.5 per cent, of the total rise and fall from 422 ft. to 299 ft., of the total central angle from 993 deg. to 638 deg., and in distance of 321 ft. The grade crossing situation was also improved materially. On the new line there are 17 private crossings and 1 public crossing at grade, 9 overhead and 17 undergrade separations and no railroad crossings, whereas on the old line there were 17

ranged so that it would not hinder the completion of the grading program. In order that the grading would be completed by September 20, 1929, the work was divided by the general contractor among a number of sub-contractors, and, with the approval of the engineer, every sub-contractor organized his work so that it would be completed by that date. All culvert work was sub-let to one contractor who did the necessary excavating, made the concrete pipe at the culvert location and placed the pipe and the head walls. The openings provided by the pipe vary from that of a single line of 24-in. pipe to the combined openings of two lines of 66-in. pipe. The longest culvert is on Mile 18, consisting of a double 66-in. pipe, 360 ft. long.

The grading required 1,000,000 cu. yd. of common excavation and 450,000 cu. yd. of solid rock. At the north end of the line the general geologic structure consists of a layer of loam covering a stratum of clay, both of varying depths, overlaying a stratified structure of



A View of the Steel Viaduct on Mile 14 Complete Except for Handrails, Ballast and Track

public and 17 private grade crossings, 1 overhead grade separation, 1 undergrade separation and 2 railroad crossings.

The valley of the Big Blue river extends almost directly south from the mouth of the stream at the point where it flows into the Missouri river. The beginning of the new line at Leeds is in the Big Blue valley about one-half mile west of the channel. Grandview is 13 miles south of Leeds and two miles east of the channel on the summit separating the Big Blue and Little Blue river valleys. The old line followed the Big Blue channel from Leeds to Dodson, near the west bank of the river, and then following a small tributary, began the ascent out of the valley to Grandview.

The elevation at Leeds is 775 ft. and at Grandview 1,050 ft., a difference of 275 ft. in 13 miles, giving an average rise of 21.2 ft. per mile, or an average grade of 0.4 per cent. In order to establish a 0.5 per cent ruling grade compensated for curvature, it was then necessary to begin a steady climb at Leeds and carry it up the east side of the valley to the summit at Grandview.

The "backbone" of the construction was the grading. All culvert and necessary bridge work was ar-

limestone from 5 to 10 ft. thick, which is followed by alternate layers of shale and limestone. At the south end of the line this limestone and shale formation is overlaid directly by the loam. The earth excavation was made with elevating excavators and moved in "cat" wagons, while the rock excavation was made by blasting and the use of power shovels, and was moved by trucks, "cat" wagons and a narrow gage railway.

Fills were placed with side slopes of $1\frac{1}{2}$ to 1. For embankments less than 20 ft. high a crown width of 20 ft. was used and when the height exceeded 20 ft. a width of 22 ft. was required. All cuts were made with a 26-ft. width at grade. Fills were made with the material from the cuts except those at each end of the line, for which borrow was necessary. Earth excavation was taken out on a 1-to-1 slope from the base, down to solid rock. This was done because the extra material was needed for the fills, and by obtaining it in this manner the cuts were made easier to keep clean at no extra cost. Excavation of the rock was then made on a slope of between $\frac{1}{4}$ and $\frac{1}{2}$ to 1, as determined by the engineer after an examination of the rock structure by drilling.

The largest fill is on Miles 11 and 12 at the north

The Viaduct Over Flying Field Road. The Concrete Handrail Adds Materially to the Appearance of the Structure



end of the line; it contains 405,000 cu. yd. of material and has a maximum height of 65 ft. A 39-ft. concrete arch culvert, 135 ft. long and containing 3,800 cu. yd. of concrete, carries the drainage from Round Grove creek under this fill. The largest cut on the line, which is also on Mile 12, is more than 70 ft. deep and required the excavation of 119,000 cu. yd. of material, of which 71,000 cu. yd. was solid rock.

Three Large Structures

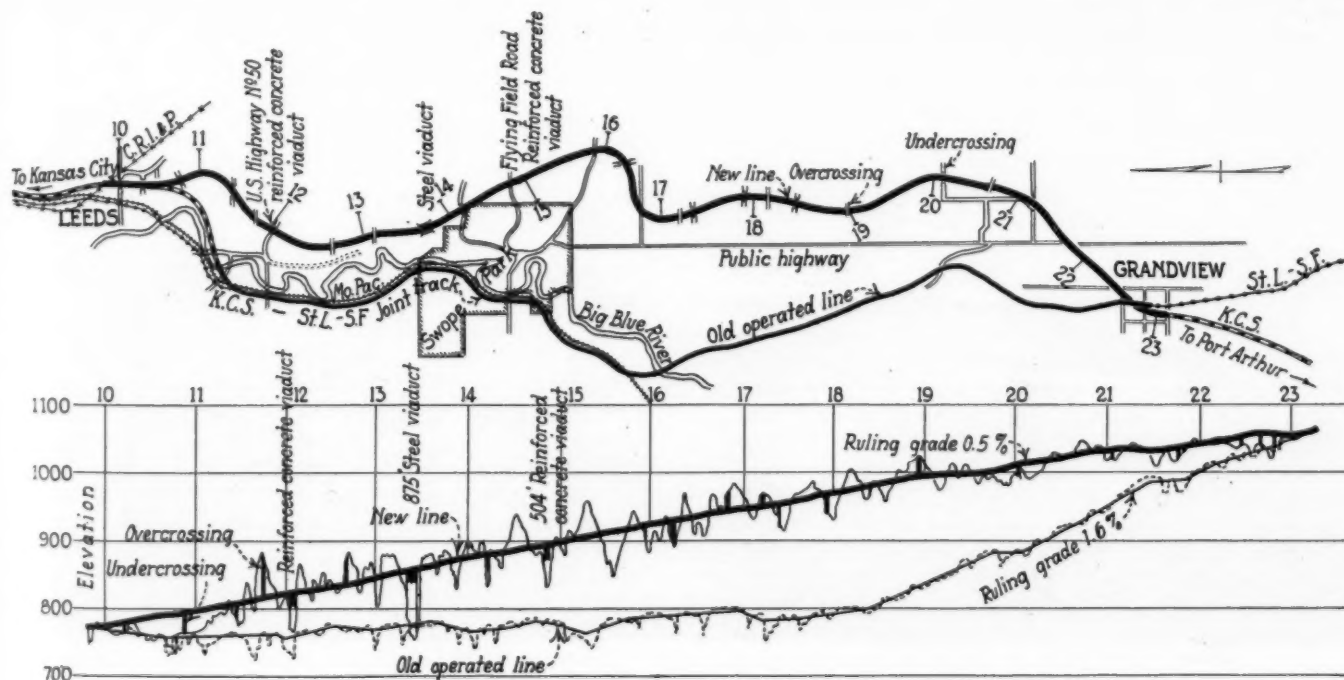
The three principal structures on the line are reinforced concrete viaducts over United States Highway No. 50 and Flying Field road, and a steel viaduct on Mile 14. At each of these points it was necessary to provide for both a roadway and a waterway, and there was no excavation available from the cuts for making a fill.

The steel viaduct is the largest of the three structures, having a total length of 875 ft. over the valley of a small tributary of the Big Blue river, and a maximum height of 110 ft. This structure consists of deck plate girder spans carrying a reinforced concrete slab floor for a ballasted roadbed. The girders are supported on steel towers which in turn rest on concrete piers. The clearing was done by the contractor and the excavation for ten of the piers was roughed out with a drag line,

the remaining excavation being done by hand. Concrete for the piers and abutments was mixed at each end of the structure and placed by chutes. The abutments and piers rest on solid rock with the exception of those supporting three of the towers near the center of the span, which are on piling.

The steel was brought to the north end of the viaduct over the new line, which had been completed to that point, by company trains and its erection was not a difficult matter. A derrick car of sufficient capacity to place a 65-ft. girder without out-rigging or blocking was used and the viaduct was erected from the north end. The span lengths are one of 65 ft. 8 in., seven of 65 ft., one of 50 ft. and eight tower spans of 38 ft.

The concrete for the ballast deck slab, which was made of quick-hardening cement, was placed from the north end of the viaduct where a mixing plant and unloading hopper were located. A temporary track was constructed across the structure and a railway motor car with a special hopper trailer was used to transport the concrete from the mixer and place it, this work being commenced at the north end and carried across the viaduct. The temporary track was also used to distribute the ties and rails before it was removed. The steel was erected and the slab completed ready for the ballast in six weeks' time. The viaduct contains 2,200



The Old and New Alignments and Profiles, Showing the Improvement in Grade Over the Old Line

cu. yd. of concrete and 1,000 tons of structural steel and is provided with a concrete walkway and pipe hand-rail on each side.

Concrete Poured Continuously

The reinforced concrete viaducts over United States Highway No. 50 and over Flying Field road are similar except that the latter has two more approach arch spans than the former. The viaduct over Flying Field road was completed in March, 1929, and is the largest structure on the new line, with the exception of the steel viaduct on Mile 14. It is built of reinforced concrete throughout, is 65 ft. above the stream and is 504 ft. long, consisting of one 95-ft. and two 78-ft. 9-in. open spandrel type arch spans, with 31-ft. girder approaches, two 31-ft. 3-in. arches and one 34 ft. arch. Excavation for the foundations was started in September, 1928, a power shovel being used to excavate to the rock and the remainder being taken out by hand. Although the footings were carried down to solid rock, no extraordinary expense was involved at this particular location.

A 120-ft. steel tower and a concrete mixing plant with automatic material-measuring devices were erected by the contractor immediately on moving onto the job. All concrete was elevated by means of the tower and chuted to various parts of the structure through counterbalanced chutes which greatly reduced the conveying time. All pier and abutment forms were built with 1-in. dressed lumber as lagging and 2-in. by 6-in. studding, with walling built up with 2-in. material. On the under side of the arch rings, lagging of 2-in. dressed lumber was used, this being the only place where material of this size was used for lagging. The centering for the three main spans was built up with new 10-in. by 10-in. fir timbers as the main supports.

Before the centering for the main spans was placed, concrete was poured in the piers up to the haunch or springing line of the arch rings. Each arch ring was divided into five sections for pouring; the top section of about 30 ft. of the ring was poured first, the two lower sections adjoining the piers then being placed simultaneously, followed by the concrete for the two key sections. A period of at least 48 hr. was required between the pouring of adjoining sections, to permit

time for the concrete to get maximum shrinkage at the upper headers. Construction joints were placed only at such points as were specified by the plans, which necessitated continuous pouring of certain sections for a 48-hr. period. This forced the pouring of some concrete at temperatures near the zero mark, but in such cases all aggregates and water were preheated and the concrete, after being placed, was protected with canvas and salamander heaters.

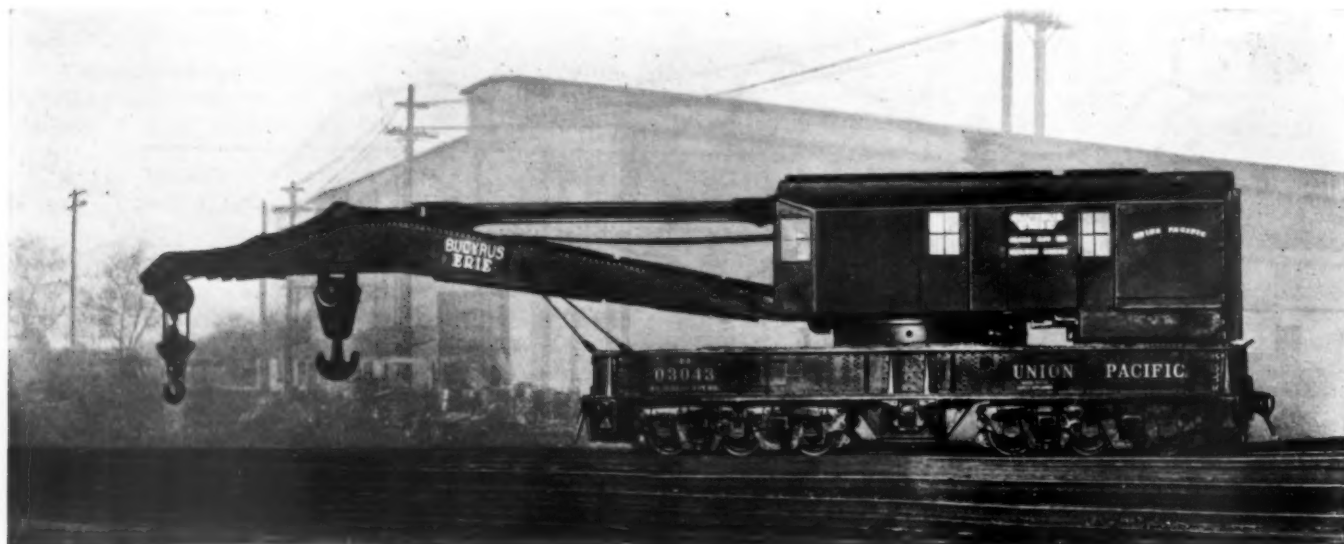
A Heavy Track

All the track-carrying structures, with the exception of a treated pile trestle over the Municipal Farm spur on Mile 11, are of concrete and steel and have ballast decks. Six of the overhead structures carrying highways are of treated timber and three are of concrete and steel. The track structure consists of 127-lb. rail with 38-in. six-hole angle bars, supported on 7-in. by 12-in. double-shoulder tie plates with a 1 in 20 cant, and 7-in. by 9-in. by 8-ft. treated ties, of which there are 3,000 to the mile. For the time being, the track is surfaced on sand to a depth of 12 in. under the ties, the intention being to place rock ballast when the roadbed has become compacted.

Two one-mile passing tracks, two emergency spurs and one industry siding, all laid with 85-lb. relay rail, have been provided. These tracks have No. 12 turnouts from the main line, consisting of 24-ft. rigid, railbound manganese frogs with raised wing rails, 22-ft. split switches and 8-ft. 6 in. one-piece manganese guard rails. The industry track turnouts have 16-ft. 6 in. No. 10 and one industry siding, all laid with 85-lb. relay rail, and other markers are constructed of concrete.

All grading, culvert, and bridge work was done by the List Construction Company, Kansas City, Mo., while track laying, surfacing and pole-line work was handled by company forces. The project was planned and constructed under the direction of A. N. Reece, chief engineer of the K.C.S., to whom we are indebted for this information. The work was under the direct supervision of E. M. Basye, resident engineer, and P. J. McCarthy and H. E. Durham, assistant engineers. Ash, Howard, Needles and Tammen, Kansas City, and C. S. Heritage, bridge engineer of the Kansas City Southern, were the designing engineers.

* * *



The World's Largest Railway Crane, Recently Bought by the Union Pacific

This crane, built by the Bucyrus-Erie Company, South Milwaukee, Wis., lifts a maximum load of 400,000 pounds at a radius of 17½ ft. For less than maximum loads it has greater working reaches than any such crane previously built. The auxiliary hook, with a capacity of 60 tons at 30 ft., lifts 45 tons at a radius of 48 ft. The machine weighs 375,000 pounds and its center of gravity is very low to permit high speed transportation.



The Locomotive is Equipped with One 125-Horsepower Motor on Each of Its Eight Driving Axles

Electric Locomotive Built by Railroad

*Construction of inclined catenary and building and
equipping of locomotive carried out by Piedmont
& Northern shop forces*

By R. L. Kimball

Railway Engineer, Westinghouse Electric
& Manufacturing Company

THE Piedmont & Northern has recently completed and placed in service a 100-ton, 1500-volt, direct-current electric locomotive. It was designed and built by the railroad's own forces with the regular shop facilities for use in coal haulage service to the River Bend plant of the Duke Power Company.

It was also necessary to provide an overhead contact system for the six-mile spur over which this service will operate. This was also erected by the railroad staff. The line includes many curves, with a maximum of 10 deg. requiring 31 transitions, or changes in curvature, in less than six miles. The inclined catenary construction with a composite feeder-messenger was selected as being admirably suited for these conditions. The contact line was erected without outside supervision, under considerable traffic and in midwinter.

The Piedmont & Northern itself is of peculiar historical interest. Built by J. B. Duke, of tobacco fame, it commenced operation in 1911 as the Greenville, Spartanburg & Anderson. Later this road and the Piedmont Traction Company were united under the present name. It was the first 1500-volt direct current electrification. Energy is supplied by the Southern Power Company for the entire 125 miles of route.

The most recently built locomotive is of an unusual type developed by the railroad during the war when much-needed locomotives were constructed from

obsolete baggage car equipment. The cab and underframing were constructed and the trucks rebuilt at the Greenville shops under the supervision of A. D. Frye, superintendent motive power. The locomotive is mounted on four, two-axle, swivel trucks. Each pair of trucks supports a platform or subframe, through a centerpin and side bearings on each truck. The two subframes are joined at the inner ends by a hinge joint. Each platform carries one of the two cab center pins. One of these center pins is allowed to move longitudinally to permit passage around curves. For freight service the riding qualities of this type of locomotive are very good.

The traction motors used are duplicates of those used on previously built locomotives and are rated at 125 horsepower each. The older dynamotor-compressor blowers have been replaced by 1500-volt series motor-driven compressors and blowers. This change was made in the interest of simplicity and to insure partial blower and compressor operation in the event of failure of one machine. The compressors each have a capacity of 75 cubic feet. Energy for the operation of the control and for cab lights is obtained from a battery. This battery is charged in series with the auxiliary motors.

The equipment includes eight traction motors—Westinghouse Type 562-D5; forced ventilation; battery control; electrically heated cab; K-14-D Westinghouse



Tangent Construction with Loop Hangers

air brakes; 2 Westinghouse two-stage 75-C compressors; and pedestal-mounted motorman's brake valves.

The problem presented by the overhead construction was one of heavy curvature. In spite of some relocation there are only 12,000 feet of tangent track in a total of 30,000 feet. The curvature changing 31 times in this distance necessitates an unusually large number of transition spans for the distance involved. In addition to this the erection work was carried on in mid-winter while the construction traffic for the River Bend plant was being handled over the track by Duke Power Company steam locomotives.

The inclined catenary type of construction proved ideal for the conditions. By properly proportioning the tensions of the messenger and the contact wire, and allowing the hangers to assume an inclined position on curves, the hangers are made to function both as hangers and as pull-offs. This holds the contact wire in a smooth curve corresponding to the center line of the track and does not require any mid-span pull-offs or back-bone construction. Pull-offs at the poles are used only on the sharpest curves of which the maximum is 10 deg. This construction insures good operation and presents an attractive appearance.

The catenary is supported by creosoted wooden poles with an average span of slightly over 140 feet and a maximum span of 150 feet. Because of the large percentage of curvature and resulting high pin loads, suspension insulators were used instead of pin-type insulators. The feeder-messenger is a composite copper-copperweld cable of 500,000 circular mils equivalent conductivity. From this is suspended a 300,000 circular-mil grooved copper contact wire. The construction is arranged to permit both wheel trolley and sliding pantograph operation.

In the past there has been some feeling that erection of the inclined catenary was too complicated to be undertaken without skilled supervision. This six-mile section was undertaken and carried through by the railroad's own forces without any outside supervision. The

problem is not beyond the abilities of a good line force.

The erection forces were provided with tables showing the proper pole locations, hanger sizes and spacings. With this information the work was carried through in 680 man-days. One line gang was used for the entire job, and one for two weeks. Both were under the direction of H. C. Holshouser, supervisor, and G. H. Kenner, line foreman. The gangs consisted of six linemen and helpers each, while one had ten ground men

Principal Dimensions and Characteristics of Locomotive

Total length over knuckles	64 ft. 10 in.
Total width over grab irons	9 ft. 11 in.
Total height—rail to top of locked pantograph.....	15 ft. 9½ in.
Length of cab over roof.....	47 ft. 6½ in.
Width of cab.....	9 ft. 7 in.
Truck Centers (No. 1—No. 2).....	16 ft. 10 in.
(No. 2—No. 3).....	13 ft. 10 in.
(No. 3—No. 4).....	16 ft. 10 in.
Truck wheel-base	7 ft. 0 in.
Total wheel-base	54 ft. 6½ in.
Weight per driving axle.....	25,000 lb.
Total weight	100 tons
Maximum starting tractive force.....	52,000 lb.
Tractive force—1-hour rating at 14.7 m.p.h.....	25,600 lb.
Tractive force—continuous at 14.7 m.p.h.....	18,550 lb.
Gear ratio	17:60
One-hour horsepower	1,000
Continuous horsepower	795
Maximum safe speed	45 m.p.h.

and the other eight. Approximately 225 pole holes were dug and anchors set in two weeks. The following week the poles were set, bracket arms erected and guys attached. It was necessary to string the wire while power plant construction traffic was not running. This was done during four nights and one Sunday. The last week was equally divided between clipping in the hangers and putting on steadies, making minor adjustments, etc. The bracket arms, hangers and fittings were supplied by the Westinghouse Electric & Manufacturing Company. The initial equipment, supplied by Westinghouse, consisted of six locomotives, 27 passenger and baggage cars, and six substations. Subsequently six more locomotives were purchased and a total of six have been built by the railroad.



End of Five-Degree Curve—200-Car Yard Shown in Background

Graphic Charts for Operating Problems

Basis proposed for portraying conditions daily to superintendents and trainmasters

By J. W. Foote

Superintendent, Niagara Junction Railway,
Niagara Falls, N. Y.

GRAPHIC charts are invaluable for portraying deviations from the normal trend of operations, in a way that statistics cannot do. Their chief function is to give a tip on irregularities which will lead, upon intelligent use of this pointer, to a detailed study of the abnormalities. This is particularly true of day-by-day charting of any operations.

Railroad officers, with the exception of those in a comparatively small number of departments, have been slow to make use of this valuable tool. In the operating department, particularly on the division staffs, charts are not, as a rule, prepared and used by local officers. Usually graphs are made in the general office and forwarded to the division personnel for their perusal and study. While these officers are gradually becoming familiar with graphic representation and are now able to read them, little attempt is made to devise charts to cover the local problems of superintendents and trainmasters.

The charts received locally on the railroads cover, as a rule, performances of the last month or so, whereas the greatest advantage of graphic representation is to point out the trends currently and to indicate the need of action before a long period has been recorded.

The simplicity with which charts may be prepared, without the need of technical knowledge, appeals to all who have used them. Ordinary cross-ruled paper, a pencil and a straight edge provide the tools for any graphic representation suitable for ordinary problems.

Divisional Charts

Operating officers are familiar with the charting of safety-first statistics and of operating data by years and by months. While this form of chart is useful and educational, the greatest help to local officers is the

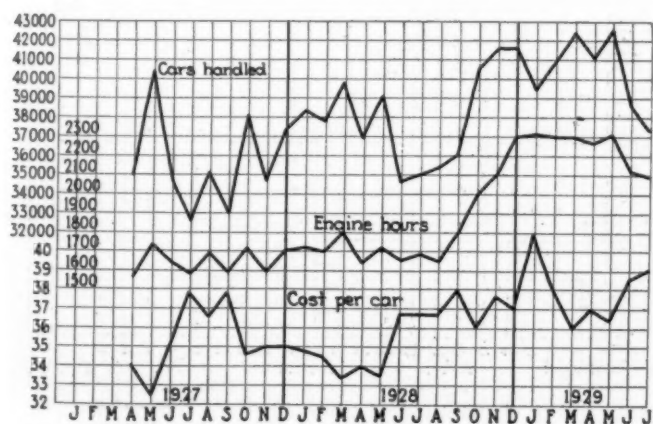


Fig. 1. Chart of Divisional Cost Production

graphic representation of the various phases of divisional operation. Local officers can, with profit, chart their operations in a similar manner. If divisional costs, tons per train hour, per cent of trains on time, and similar data are plotted, prompt steps may be taken to correct irregularities. Samples of this type of chart are shown in Fig. 1, yard operation data by months, indicating the additional cost per car because of increased switching required after closing an adjoining yard; Fig. 2 is a graphic representation of data of a small station, indicating the trend of car handling, revenue, etc.; while Fig. 3 represents the various fluctuations in delays by weeks over a long period, indicating the effect of relief afforded by an additional train.

The charting of yard operation, such as shown in Fig. 4, representing the work of a yard hour by hour, will apprise the yardmaster or terminal trainmaster of conditions of which he may have had a somewhat distorted conception. The work of each trick may be weighed more accurately than before. If the same method of adding the arrivals or departures in cars by hours is carried out by the calendar, that is, by showing all Mondays, Tuesdays and so on, for a long period, still greater revelations will be made. It will be found that calendar fluctuations are greater than commonly supposed and usually indicate the possibility of a more intelligent reduction of power.

Analyzing Freighthouse Operations

A graphic analysis of freighthouse operation, such as shown in Fig. 5, may be made in a short time and will usually bring to light some condition that was lost sight of during a study of the figures. It may be observed, in this example of a comparatively small station operation, that there is a chance for a reduction in force on certain days of the week.

It will usually be found that calendar fluctuations will continue, with more or less regularity, over a long period, and it will be possible to set up trucking forces for each calendar day, based upon the average, without much chance of being caught short of help. As a rule, under the rule-of-thumb method, too great a factor of safety is maintained, with resultant unproductive labor. Although statistical analysis will determine the variations, graphic representation will show it up more accurately and strikingly.

Train Operation Charts

Perhaps the most useful form of graphic charts is that presenting train operation. Old timers remember the board formerly used by chief dispatchers to arrive at single-track schedules. It was possibly 8 or 10 ft. long and 3 or 4 ft. wide, upon which drawing paper

was mounted, showing hours and minutes in vertical lines and the division stations arranged horizontally and spaced according to mileage. This was a cumbersome but effective graphic chart made by stringing the schedules with silk threads and pins and thereby setting up the meets on single-track time tables.

A simpler and more useful chart for ordinary purposes may be made by drawing with duplicating ink the hours and station lines on a piece of heavy paper of relatively small size, say 12 to 18 in. by 20 to 30 in., and making a hundred or more copies on a duplicating machine. This blank may be used in a great variety of ways and will be found invaluable to a chief dispatcher, trainmaster, or superintendent. An entire day's operation may be plotted on such a graph, a par-

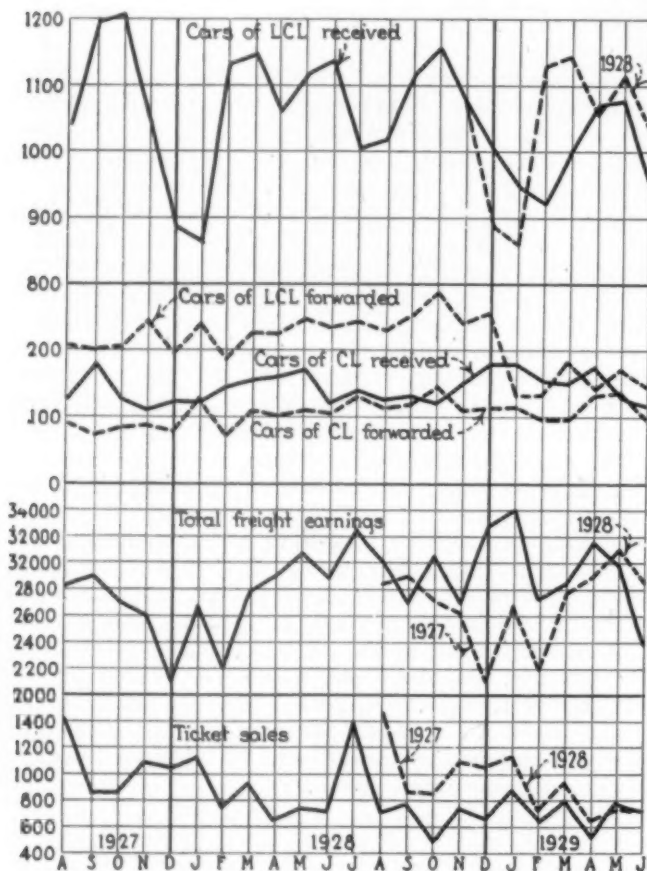


Fig. 2. Data for a Small Station's Operations

ticular train may be shown for a long period, or a single day's run may be represented.

If a certain train is not making schedule, the plotting of its operation for a month will show just where the trouble is occurring. Riding the train for a few days does not determine the trouble, but riding it after it has been plotted on the form for a month or so, usually will result in eliminating the delays because the points of delays in a long period, shown graphically, give the composite sources of trouble and an intelligent analysis of causes may readily be made.

With modern power and the tendency to expedite all freight trains, there is little chance, except perhaps on local trains, for crews purposely to make slow runs and the old idea of riding trains to get them over the road is rapidly becoming out of date, although the supervision of rule observance is still necessary, and the moral effect of supervision is stimulating to good

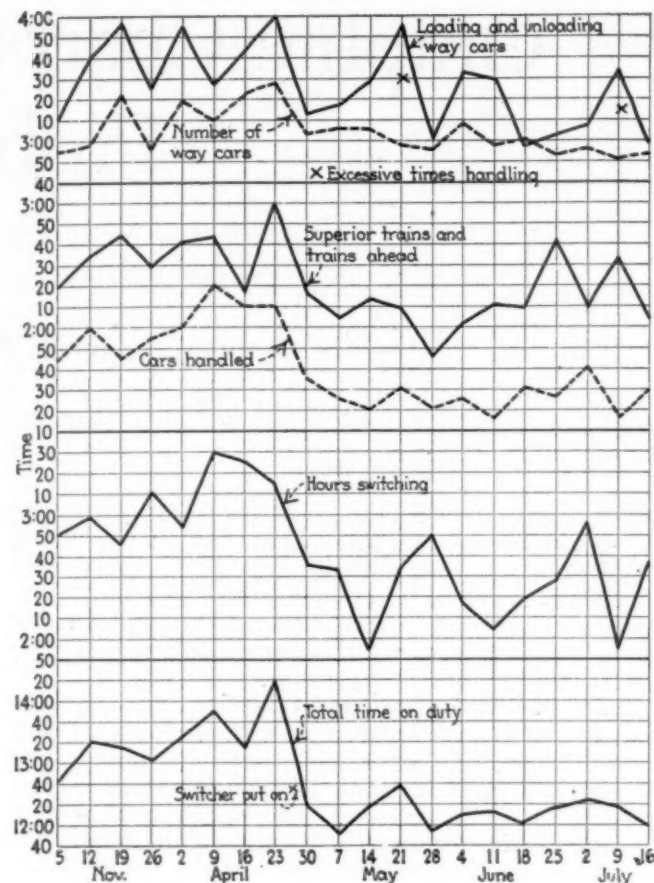


Fig. 3. Fluctuations in Delays

operation. There is no doubt that a trainmaster will know more about a train after plotting it for a period, than he will learn from days of riding. Thus the graphic chart keeps pace with high-speed freight trains. The form described is useful in single-track analysis, but may be used with equal success for double-track operation, particularly through switching territory where train interference is heavy.

An officer coming upon a division for the first time can, by plotting a typical day's operation, learn just how the division functions in general within a day or two, instead of learning imperfectly the existing method of operation after a long period of observation and study of train sheets.

The time necessary to plot operations on this very useful chart is small, and the plotting requires no draftsman. Any intelligent clerk, once instructed can

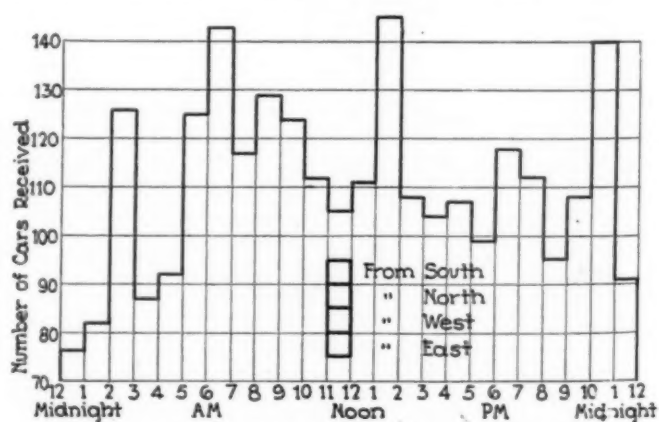


Fig. 4. Method of Charting Yard Operation

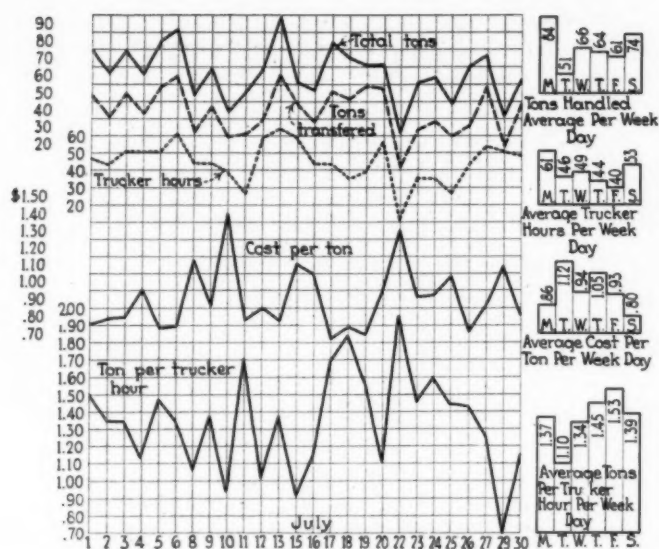


Fig. 5. Graphic Analysis of Freight House Operation

prepare a chart of operation in pencil very rapidly; in fact, it could be done daily on single-track divisions for the study of the chief dispatcher or superintendent. It will show irregularities quickly, clearly and more accurately than tedious hours of study of train sheets.

Bus Bill on Senate Calendar

WASHINGTON, D. C.

A PROVISION intended to prevent railways from acquiring control of passenger motor-bus or coach carriers has been inserted by the Senate committee on interstate commerce in the Parker bill, H. R. 10,288, for the regulation of interstate motor carriers, which it favorably reported to the Senate on April 14 with about a dozen amendments from the form in which it was passed by the House. The amendments were adopted by the Senate committee without hearings on the bill, although it received many written communications. Section 9 of the bill authorizes the commission to approve a corporate consolidation or merger of two or more corporations, one of which is a common carrier by motor vehicle, and any acquisition of control of such carrier, upon a finding that it would be in the public interest. It also provides that any such consolidation or acquisition shall be invalid and unlawful unless approved by the commission.

At the end of this section the Senate committee added the following:

(c) No consolidation, merger, or acquisition of control shall be approved under this section if it involves the consolidation or merger of two or more carriers by railroad or the acquisition of control of any carrier by railroad by another such carrier; nor shall any consolidation, merger, or acquisition of control be approved under this section, if one or more of the corporations involved is engaged, directly or indirectly, in the transportation of persons by railroad.

The Senate committee also adopted the following amendment, intended to promote competitive service on all motor-carrier routes, in place of a provision in the House bill which was intended to provide for additional competition on routes served by lines under railway control;

(f) If, upon consideration of any application for a certificate of public convenience and necessity, it appears that there is no adequate service by a common carrier by motor vehicle and/or no actual and adequate competition by common carrier by

motor vehicle, in whole or in part, upon the route and/or between the fixed termini covered by the proposed operations, then the absence of such service or competition shall be sufficient evidence that the public convenience and necessity will be served by the whole or that part of the proposed operations with respect to which such absence of service or competition exists; and a certificate shall be issued accordingly if the applicant is qualified to comply with the requirements, rules, and regulations of the commission for such service. For the purposes of this section competition shall not be deemed to be actual unless there is competition in good faith between at least two common carriers by motor vehicle that are not affiliated, directly or indirectly, through stock ownership or control, or in any other manner.

Another amendment, adopted on recommendation of the National Industrial Traffic League, provides that an order recommended by a member or examiner of the Interstate Commerce Commission or one of the joint boards of state representatives shall become effective as the order of the commission unless stayed or postponed within 20 days, instead of 10 days as in the House Bill.

The Senate steering committee has included the bill in its program of legislation to be considered before adjournment.

In its report the committee said:

In order to protect the safety of the traveling public and others who use the highways and to furnish a superior type of service, it is necessary to enact legislation with regulatory provisions that will be adequate to accomplish this end. Such provisions will necessarily result in eliminating carriers that might, in the absence of federal supervision, enter upon or continue operations without being fully qualified to protect the public safety and safeguard the public interest. While recognizing this situation, the committee at the same time desires fully to preserve competition and prevent monopoly in this rapidly growing form of transportation. The House bill contained numerous provisions to insure such competition, and the committee has, by several amendments, provided further safeguards against monopoly. Thus existing competition is preserved by the provisions of section 5 providing for the issuance of certificates of public convenience and necessity to all bona-fide carriers operating on April 1, 1930. The provisions of the transportation act are not to be construed as giving any preference to rail or water transportation over motor vehicle transportation. The commission is generally directed to preserve competition in service and under the committee amendment to subsection (f) of section 5, the absence of motor vehicle service or of actual competition on any route is made sufficient evidence that public convenience and necessity will be served by the granting of a certificate. Under the committee amendment to the merger section, consolidations, mergers, or acquisitions of control, where one or more of the parties is a railroad carrier, are forbidden. In the section with reference to rates, the claim that a rate is unjust to a competing carrier engaged in a different kind of transportation, will not justify a holding that such rate is unjust or unreasonable.

* * *



Lehigh Valley Track Near Towanda, Pa.,
Showing 66-Ft. Rails

Consolidation of Value From Transportation Angle*

Interstate Commerce Commission should be credited with share of responsibility for present efficiency of railways

By William H. Williams

Chairman, Board of Directors, Wabash

IN the adoption of its final consolidation plan providing for the division of the railways into twenty-one systems, the Interstate Commerce Commission has acquitted itself of a task of great magnitude and of vast economic significance. I doubt whether legislation has ever devolved upon an administrative body a more arduous and serious duty than was imposed upon the Commission by the requirement of the Transportation Act that the Commission should, under conditions defined by the Act, formulate a final plan "for the consolidation of railway properties of the continental United States into a limited number of systems." I doubt also whether any effort at so stupendous an adjustment could have commanded a larger measure of satisfaction and approval than has attended the outcome of the Commission's labors.

I believe that I am justified by the merits of the plan and by the manifest approval with which it has been received in treating the plan in all its essential aspects as an actual if not a technical finality. In this view let me consider some of the outstanding features of the plan.

The Proposed Wabash System

One of the systems serving the city of Chicago and the industrial area lying eastwardly to the Atlantic seaboard is to be based upon the Wabash. The proposed Wabash system, on the basis of the 1928 accounts, is earning 5.25 per cent upon its capital investment and ranks third among the twenty-one systems provided for by the Commission's plan, while its rate of return on property investment is exceeded by only two of the proposed systems, the Chesapeake & Ohio-Nickel Plate system and the New Haven system.

The Commission's final plan makes possible, for the first time since the passage of the Transportation Act in 1920, complete consolidation of railroad properties as distinguished from control through stock ownership for the law has provided that to obtain the approval of the Interstate Commerce Commission a consolidation must not only be in the public interest but must be in harmony with and in furtherance of the Commission's plan, something obviously impossible prior to the existence of the plan. Although under the law the Commission may at any time, upon its own motion or upon application, reopen its plan for such changes or modifications as in its judgment will promote the public interest, it is generally understood that this supplemental jurisdiction will be exercised

in matters of detail and not in matters affecting the essential consolidation structure. For example, it is not to be presumed that there will be any change or modification which will reduce the number of competitive systems in the Eastern Rate group, which under the Commission's plan is to be served by five well-balanced systems.

The highly competitive character of the railway service in this territory will be apparent when you consider that over 95 per cent of the tonnage which moves over Wabash rails to and from Chicago, Kansas City, St. Louis, Detroit, Toledo and the Niagara frontier moves in competition with the railroads which will be embraced in the four other systems to be set up in this territory. It was the Commission's view that efficient service in the Eastern Rate group will be most effectively assured by the preservation of this healthy competition. Indeed, there was no alternative as the Transportation Act directs in terms too clear to be misunderstood that competition shall be preserved as fully as possible and, whenever practicable, existing routes and channels of trade and commerce shall be maintained.

The questions are asked: Will it be possible to establish the new systems provided for by the Interstate Commerce Commission within a reasonable time? Will new legislation be necessary? Will these systems provide cheaper service for the shipping public? Will they function more efficiently than their existing constituents?

In response to the first question it seems safe to predict that the consolidation program will go forward expeditiously. While powerful railroad companies or banking groups or resourceful individuals might be tempted to retard those features of the Commission's plan which run counter to their own ambitions, public opinion and the logic of the situation should assure general acceptance and co-operation. In our judgment the fruition of the Commission's plan will be realized within a reasonable time, having regard to the magnitude of a task involving many radical readjustments and the establishment of systems to provide adequate and efficient rail transportation not only for ourselves but for future generations.

Whether additional legislation is desirable or necessary to make the consolidation program effective is a moot question. The Transportation Act as it now exists, and has existed since 1920, provides for the unification of railways by two methods, one of them relatively incomplete and stopping short of that total unification which should be the final objective.



William H. Williams

* An address presented before a meeting of the Chicago Association of Commerce at Chicago, March 19.

Paragraph 2 of Section 5 provides for the unification of rail carriers by stock control or lease or any method not involving consolidation into a single system for ownership and operation. A number of important unifications, of which the present New York Central and Missouri Pacific systems are typical, have been effected under this paragraph.

Paragraph 6 of Section 5 provides for a complete consolidation of two or more carriers into one corporation for ownership and operation, but this power must be exercised subject to two important statutory conditions. I have already referred to the condition that consolidation must be in harmony with and in furtherance of the Commission's final consolidation plan. While complete consolidation under Paragraph 6 is now, as the result of the adoption of that plan, theoretically possible, it is still necessary to meet the other statutory condition which is that the securities of the new company at par shall not exceed the value of consolidated properties as determined by the Commission, a determination which cannot be completed for a very long time. This provision introduces complications which are serious but not necessarily insuperable. As time goes on it will be possible accurately to measure them and it may prove desirable to amend Paragraph 6 in such a way as to eliminate that. In the meantime, however, it will be possible to proceed under Paragraph 2 of Section 5 to effect useful unifications by stock control or lease or any other method short of actual consolidation for ownership and operation.

In another aspect, Paragraph 6 should perhaps be clarified. In its present form this paragraph refers to a consolidation and it is our belief that this term is here used in its broadest descriptive sense to cover any form of complete corporate integration, including both merger and consolidation. These terms are often treated as synonymous but there is an important point of technical difference—one that was evidently not in the minds of the framers of the Transportation Act. When two corporations merge one absorbs the other without changing its character or losing its identity. When, however, two corporations consolidate each is extinguished and an entirely new corporation is created.

Parker-Fess Bill Clarifies Consolidation

A bill known as the Parker-Fess bill to amend the provisions of the Transportation Act in a number of particulars is now before Congress. This bill specifically authorizes unification of two or more carriers by merger as well as by consolidation. This proposed elaboration of the present Transportation Act seems desirable as a measure of precaution for, if a narrow construction were to be placed upon it, which would restrict it to technical consolidations and would exclude mergers, the Wabash and other companies similarly situated might find it necessary to surrender valuable franchises and to call in and retire existing stock and issue new stock, involving useless labor and expense and possibly an unintended burden of taxation.

Moreover, a new corporation formed by consolidation might not have as satisfactory credit as its constituents. For example, the Wabash has a record for sustained earning power, as the result of which its bonds are legal investments for saving banks and trust funds in New York while a new company, without its history of earnings, might not be able to qualify under the statutes of New York and other states. I do not believe that such a restricted interpretation should or would be placed upon the present Transportation Act but to avoid any doubt it seems desirable to clarify its meaning as is proposed by the Parker-Fess bill.

Under the Transportation Act as it now exists, consolidations are voluntary and in our judgment should not be made involuntary. It is conceivable, however, that some hostile or speculative interest may acquire or hold the stock of important strategic lines for the purpose of obstruction. For this reason it may be desirable to amend the Transportation Act to provide, under carefully guarded restrictions, for the condemnation, under federal power of eminent domain, of any railway property essential to the consummation of a consolidation approved by the Commission. I am confident that such drastic legislation will never become necessary and that all will co-operate in an effort to realize in the interest of improved transportation service the basic features of the Commission's consolidation program.

A word or so as to the value of rail consolidation from the shipper's standpoint may be appropriate. It is our view, based upon a somewhat careful study of the more important unification cases considered by the Interstate Commerce Commission, that the economies to be realized from rail consolidation are often overstated. Any well-considered consolidation should, of course, result in numerous economies which in the aggregate will be substantial; but, it is doubtful whether sufficient economies will ever be realized through consolidation alone to make possible a general reduction in freight rates.

On the other hand, it would be difficult to overstate the value of consolidation from a transportation standpoint. No one can say confidently how far it will go in the improvement of service, but we can be entirely confident that the beneficial results will be real and important. Enlarging the units by which transportation is conducted will enable them to distribute their equipment better, eliminating to a substantial extent the inequalities of car and power supply which under present conditions often exist between different territories and enabling each within the limits of its own system to meet heavy seasonal demands in one territory by requisitioning cars and locomotives from another territory where the demand at that particular time is light. Furthermore, fewer cars will have to move off their home lines to reach their destination and there will be therefore less moving of empty cars toward their home lines and a better utilization of each car. These two things alone should be the equivalent of adding many thousands of cars to the nation's car supply, making car shortages more infrequent and, when they do occur, less severe.

Consolidation Will Eliminate Transfer Delays

Another desirable result of consolidation will be the elimination of the delays which too frequently result when cars are transferred from one railroad to another. In other ways, also, consolidation will expedite service, making it possible for carriers to so route freight as to avoid the points where today the heavy interchanges between carriers are effected and in which congestion and delays first and most seriously affect the nation's traffic. Furthermore, it will greatly facilitate the establishment of through fast-freight schedules. To the extent that this has already been done shippers have found it of immense benefit and after consolidation many more of these services will undoubtedly be feasible, and being feasible, be established.

A less obvious but none the less real advantage will be that in a far larger proportion of cases the shipper and the receiver of freight will have but one organization with which to deal. In it will be concentrated all responsibility for any particular shipment and in all

matters relating to the shipment, such as tracing, re-consignment or anything else, it will be necessary to deal only with the one carrier, thereby greatly simplifying and hastening the disposition of the business for shippers as well as for the carrier.

Not the least of the advantages of consolidation is the resulting possibility of linking up sections of railroad now separately owned and not used together as a part of a single route, thereby providing additional railroad facilities and sometimes shorter and better routes quite as effectively as could otherwise be done by much new and costly construction. This is illustrated by referring to two new routes which can and will be established when the Interstate Commerce Commission's final plan for consolidation is put into effect.

Under that plan the Baltimore & Ohio will be able to, and has announced that it will, by linking up sections of railroad now owned by five separate corporations and constructing a relatively short connecting railway, establish a new and additional route from New York to Chicago and the West, which actually will be 83 miles shorter and will cross the Alleghenies 700 ft. lower than its present line. Another new route will be afforded by the Wabash system which, by linking the Lehigh Valley and the Western Maryland by trackage or new construction, will provide a third route from New York to Pittsburgh and will, in connection with other lines which are to be consolidated with the Wabash, afford a new route from New York to St. Louis approximately 61 miles shorter than the present Wabash-Lehigh Valley route via Buffalo.

Finally I should mention the more intensive use of terminals. In the Wabash application to the Commission the railroad took an advanced position in respect to the use of terminals. The Commission itself has gone further and has taken the definite position that all terminal properties should be thrown open to all users on fair and equal terms so that industries on whatever rails located shall have access to all lines radiating from that terminal and every line carrier reaching that terminal should similarly have access to all terminal tracks within the terminal area.

In conclusion may I draw attention, first, to the growth of the powers and the broadening of the responsibilities of the Interstate Commerce Commission; second, to the high credit of the railways and to their unprecedented efficiency in public service; and third, to the growth of understanding and co-operation between the Commission and the railway companies. That these developments should have progressed in such apparent relation to each other is significant.

Today the Interstate Commerce Commission shares with railway management responsibility for the credit of the railways, for the stability of the railway structure, and for the efficiency of national transportation. It is not hard to believe that the fine co-operation which has so largely contributed to the present-day efficiency of the transportation machine will be further exemplified in general railway support of the judgment now reached by the Commission in the great case for the solution of which the railways have so loyally provided the vast material.

THE BUREAU OF PUBLIC ROADS, Department of Agriculture, reports that in 1929, a total of 385 railroad grade crossings were eliminated on the federal-aid highway system; 48 by the construction of bridges and 337 by relocation of the highway. Since 1917 a total of 4,676 grade crossings have been weeded out of the system—995 by grade separations and 3,681 by relocations. Georgia reports 82 eliminations in 1929, Alabama, 40; Texas, 34; Montana, 27; and Mississippi, 18.

Special Argument for Senator McKellar

WASHINGTON, D. C.

SENATOR McKellar, of Tennessee, has filed with the Interstate Commerce Commission a 71-page brief and argument against the proposed report by Examiner Waters in the case before the commission involving proposed increases in rates on road-building materials between points in the Mississippi Valley, which the commission allowed him to file after he had written to the commissioners a letter of protest following the closing of the record in the case. He said he wanted the commission to consider his brief solely on its merits and not because he happened to be "an official" of the government, and he asked that each member of the commission do as he said he had and read every word of the record in the case.

Referring again to his presence during part of the argument in the case he said certain of the commissioners had refused to consider economic conditions in the territory involved as reasons why the public should not be taxed additionally on account of these rates and that "the bold statement was made that the public interest could not be considered in much the same tone of voice that probably Mr. Vanderbilt used about 50 years ago when he uttered his celebrated statement on the same subject."

Senator McKellar insisted that the case should have been dismissed by the examiner at the close of the carriers' testimony because they had not met the burden of proof, but he said that the examiner "nearly always had the railroad view" and that "evidently the mind of the examiner was made up to begin with." If the commissioners read the record, he contended, "it is impossible for any commissioner to hold anything else but that the carriers have failed to make a case."

Attorneys for the Allen Gravel Company, a protestant in the case, have written the commission a letter, instead of a brief, replying to Senator McKellar's letter, indicating that they were not pleased with his efforts in their behalf outside the original record in the case, and denying what they seemed to regard as implications that they had inadequately presented their case to the commission. They said he apparently was not present at the afternoon session of the argument which he attended because "all of the points which he raises, so far as they are pertinent and supported by the record and time permitted, were very fully discussed and completely disposed of in our argument in behalf of the Allen Gravel Company."

They said, however, that they had not spent time on the question of the public interest because "there are specific and detailed transportation, competitive and commercial reasons shown by this record which require disapproval of the carriers' proposal and it is not necessary or desirable to rest the case on intangibles such as this," and because "the proposition that due regard for public policy will be considered is so well established as to require no elaboration." They also assert that "abstract principles and matters not shown by the record need not and should not be relied upon" and that the Senator's argument serves only to confuse the case.

THE NORTHERN PACIFIC has bought 40 acres of land in the southern section of Seattle, Wash., which will immediately be developed for industrial use. The initial investment in this property is \$500,000.

B. & O. Has Satisfactory Year

Net income in 1929 only \$333,000 less than that of best year in history—Alert to consolidation opportunities

THE Baltimore & Ohio in 1929 had a net income after all charges of \$28,767,908, which was but \$333,023 less than that of 1928, the best year from this standpoint in the history of the company. After allowance for interest on preferred stock, 1929 income was equivalent to \$11.24 per share on the average amount of common stock outstanding during the year. Dividends on common stock were paid at the rate of 6 per cent per annum during the first half of the year, when the rate was raised to 7 per cent which has since been maintained. After payment of the dividends on the common stock a surplus of \$11,045,597 remained to be added to the accumulated surplus account of the company, which at the end of the year totaled \$114,468,786. The company sold \$41,107,700 of additional common stock during the year, which brought the ratio of stock to total capitalization up to 36.41 per cent, funded debt representing the remaining 63.59 per cent. Gross income before fixed charges was twice the total of these charges.

Revenues from the transportation of freight in 1929 totaled \$205,489,402, an increase of 4.20 per cent over 1928. Passenger revenues totaled \$22,138,627, a decrease of 6.64 per cent. Other transportation revenues totaled \$17,790,747, an increase of 11.95 per cent, reflecting retroactive payments for the handling of the mails at a higher rate. Total operating revenues were \$245,418,776, which was 3.63 per cent greater than in the preceding year and a total exceeded but twice in the company's history, viz., in 1926 and 1927.

Increased Maintenance Outlay

Operating expenses in 1929 totaled \$180,570,034, an increase of 4.65 per cent over the preceding year. The principal increases occurred in maintenance of way and maintenance of equipment expenses, the former having risen 9.38 per cent and the latter 9.20 per cent over the 1928 totals, reflecting a liberal maintenance policy designed to bring the property to still higher up-keep standards.

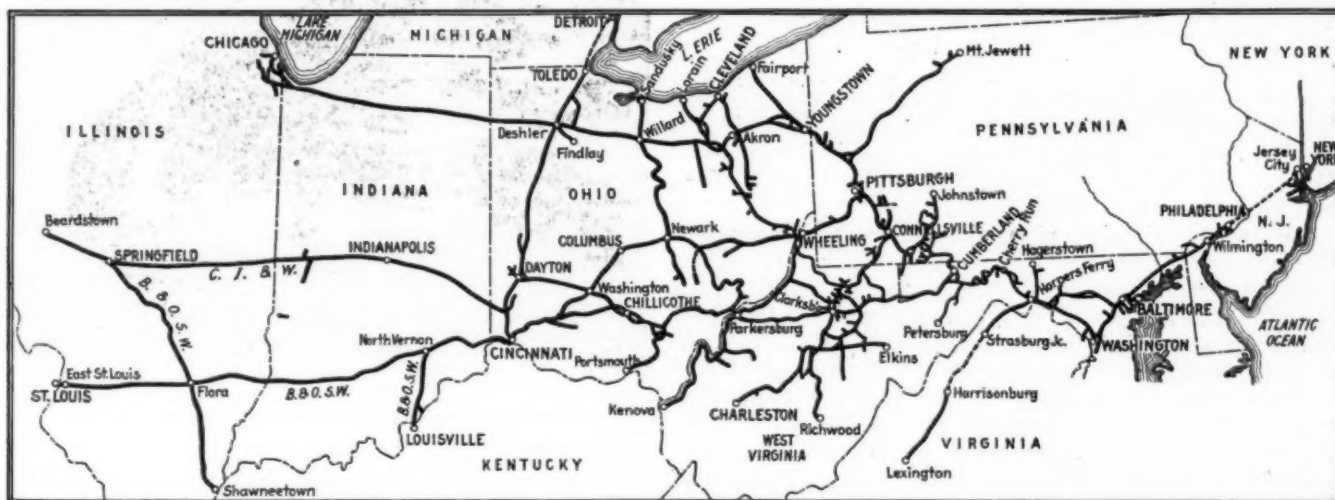
The increase in transportation expenses was less than one per cent in spite of an increase in traffic and the transportation ratio declined from 34.81 in 1928 to 33.80 in 1929. The operating ratio was 73.58, as compared with 72.86 in the preceding year, the increase being due entirely to the expansion in the maintenance program.

Details of operating revenues and expenses, fixed charges and dividend disbursements are given in Table I. In Table II are shown comparative freight service operating statistics for 1929 and 1928. It will be noted that, while net ton-miles increased 2.8 per cent, train-miles rose only 1.8 per cent and train-hours only 1.4 per cent. Car-miles per car-day increased 4.7 per cent. Increases were recorded in both gross and net ton-miles per train-hour. Locomotive-miles per locomotive-day increased 6.2 per cent and unserviceable freight locomotives declined 16.6 per cent.

Almost 25 Million for Improvements

The company in 1929 made liberal expenditures for capital improvements, the net increase in the property investment being \$24,813,486. Of these improvements those to roadway and structures totaled \$15,293,860. The cost of new equipment acquired during the year totaled \$14,560,820, but \$7,408,929 of this was counterbalanced by retirements of old equipment. New equipment purchased during the year included one heavy duty freight locomotive, one trailer (for rail motor car), 25 passenger train cars, 100 express cars, 2,675 box cars, 1,700 hopper cars and 700 gondola cars.

Passenger business again declined in 1929, total gross revenues being \$22,138,627, a decline of 6.64 per cent from the preceding year. The decrease continued to be largely among the short-haul passengers, since passengers carried declined 11.89 per cent, while passenger-miles fell off only 5.2 per cent. The railroad offers to its patrons a through passenger service of a high and constantly improving standard and has supplemented its rail services at some points—princi-



The Baltimore & Ohio

pally in West Virginia—with motor coach service on the highways.

The separation of tonnage into classes of commodities is not yet available for 1929. In 1928 it was divided as follows: Products of agriculture, 4.38 per cent; animal products, 1.22 per cent; mine products, 60.70 per cent (bituminous coal, 44.41 per cent); forest products, 4.28 per cent; manufactures and miscel-

able report by one of its examiners on acquisition of control by the B. & O. of the Buffalo & Susquehanna. Eighty miles of trackage rights or the construction of a new line between the Buffalo & Susquehanna and the Reading in North Central Pennsylvania would give the B. & O. its proposed new shortened route between New York and the West. The B. & O. plainly has the earnest desire to expand within reasonable limits

Table I—Baltimore & Ohio—Revenues, Expenses, Dividends

Year	Total Oper. Rev.	Total Oper. Exp.	Net Oper. Rev.	Net Railway Oper. Income	Other Income	Gross Income	Int. on Funded Debt	Net Income	Total Dividends	Rev. per ton-mile (cents)	Oper. Ratio
1921	\$199,077,853	\$167,072,093	\$32,005,760	\$21,941,696	\$10,125,088	\$32,066,784	\$22,761,053	\$6,388,891	\$2,354,529	1.103	83.92
1922	200,843,170	165,021,375	35,821,795	23,735,005	6,187,132	29,922,137	22,810,616	4,375,373	2,354,527	1.060	82.16
1923	255,594,435	199,323,961	56,270,474	42,133,129	6,032,321	48,165,650	23,333,143	22,422,036	6,153,097	1.012	77.98
1924	224,318,795	172,752,632	51,566,163	38,084,324	5,657,290	43,741,614	24,950,935	16,319,690	9,951,865	1.028	77.01
1925	237,546,940	179,099,597	58,447,343	43,034,087	6,489,977	49,524,064	26,478,252	20,793,508	9,951,797	.005	75.40
1926	252,361,830	186,306,273	66,055,557	50,805,337	6,890,426	57,695,763	27,439,262	28,494,294	11,471,253	.993	73.83
1927*	246,078,510	186,168,521	59,909,989	44,817,227	8,570,687	53,387,914	27,963,957	22,632,345	13,319,019	.977	75.65
1928	236,818,681	172,550,868	64,267,813	49,387,716	7,378,325	56,766,041	25,704,402	29,100,931	15,265,803	.974	72.86
1929	245,418,776	180,570,034	64,848,742	49,184,110	8,427,835	57,611,945	.....	28,767,908	17,722,311	.995	73.58

* C. I. & W., Indian Creek Valley and Cheat Haven & Bruceton included for first time.

laneous, 27.36 per cent; l.c.l., 2.06 per cent. In 1929, presumably, the percentage of manufactures to total tonnage registered a slight increase; at any rate the average earnings per ton-mile increased 2.16 per cent without any important upward revision in the general rate level.

Strives to Effect Consolidations

The Baltimore & Ohio has been actively interested in consolidation, impelled by the desire to put itself on a more nearly equal basis with its closest competitors from a standpoint of territories served and operating and traffic advantages. In 1929 it proposed a plan of consolidation of its own, seeking from the Interstate Commerce Commission authority to acquire control by stock ownership of a number of connecting lines, among them—importantly—the Central of New Jersey,

and it would not be surprising to see still further progress along these lines within the near future.

The company has recently sold \$63,031,000 of 4½ per cent convertible debentures to put it in funds for acquisition of other roads, to meet maturing obligations and to pay for additions and betterments. The issue was offered to the stockholders of the company and the conversion privilege refers to B. & O. common stock, the conversion price being \$120 a share in 1931 and advancing to \$130 a share in 1946. The stock is selling currently in the market at this writing at about \$118.

* * *

Table II—Comparison of Selected Freight Operating Statistics

	1929	1928	Per cent of change Inc. Dec.
Mileage operated	5,549	5,535	0.3
Gross ton-miles (thousands)	47,644,667	46,114,486	3.3
Net ton-miles (thousands)	22,179,733	21,585,999	2.8
Freight train-miles (thousands)	23,692	23,262	1.8
Freight locomotive-miles (thousands)	30,294	29,661	2.1
Freight car-miles (thousands)	1,159,267	1,128,601	2.7
Freight train-hours	2,064,945	2,035,469	1.4
Car-miles per day	31.0	29.6	4.7
Net tons per loaded car	31.1	31.2	0.3
Per cent loaded to total car-miles	61.4	61.2	0.3
Net ton-miles per car day	594	566	4.9
Freight cars per train	49.9	49.5	0.8
Gross tons per train	2,011	1,982	1.5
Net tons per train	936	928	0.9
Train speed, miles per train hr.	11.5	11.4	0.9
Gross ton-miles per train-hour	23,073	22,655	1.8
Net ton-miles per train-hour	10,741	10,605	1.3
Lb. coal per 1,000 gross ton-miles	147	149	1.3
Loco. miles per loco. day	68.8	64.8	6.2
Per cent freight locos. unserviceable	16.1	19.3	16.6
Per cent freight cars unserviceable	5.7	5.3	7.6

the Reading, the Buffalo, Rochester & Pittsburgh, the Monon, the Buffalo & Susquehanna, the Detroit, Toledo & Ironton and the Wabash.

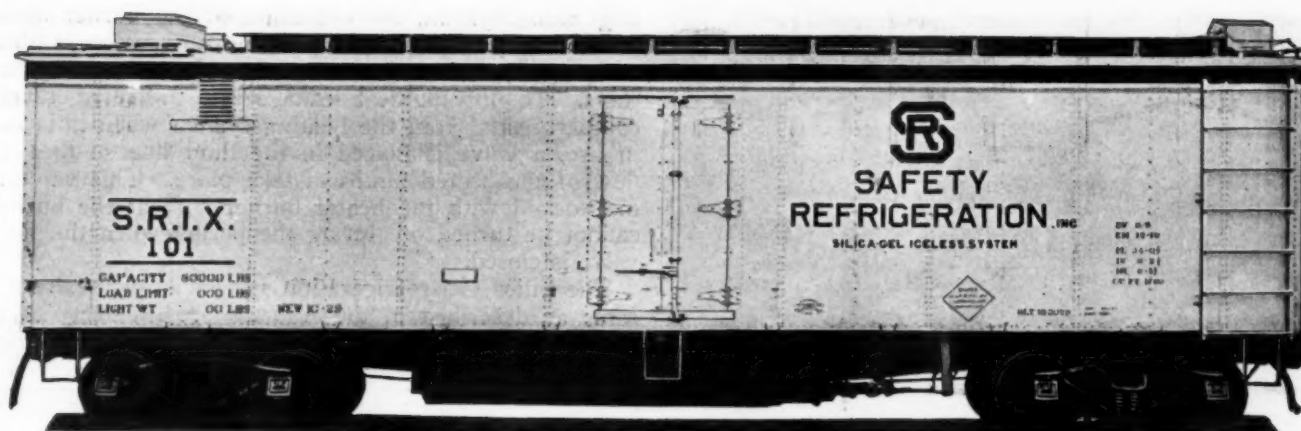
In its consolidation plan, the Interstate Commerce Commission set up the Wabash as an independent system but agreed that the Reading, the Jersey Central, the Buffalo, Rochester & Pittsburgh and the Buffalo & Susquehanna should be assigned to the B. & O. and that the B. & O. should share in the ownership of the Monon and the D. T. & I. Whether or not the entire plan will ever come to complete fruition it is impossible to predict, but definite progress is being made. Control of the Buffalo, Rochester & Pittsburgh has already been secured with the approval of the Interstate Commerce Commission, which now has before it a favor-



Wide World

Unusual Diesel Locomotive for Chilean Railway

Just completed for the Junin Railway in Chile, this 32-ton 300 hp. Diesel locomotive will operate on a track 4,000 ft. above sea level. In the photograph it is shown on the maker's test track at the foundry of Hudswell, Clark & Co., Ltd., Leeds, England, where successful trials have just been completed. The locomotive, which has a 2-6-2 wheel arrangement, is designed for 2 ft. 6 in. gage track.



One of the All-Steel Silica Gel Refrigerator Cars

Iceless Refrigerator and Heater Car

All-steel car with 48 per cent lading increase offers positive temperature control—Tested by U. S. Dept. of Agriculture

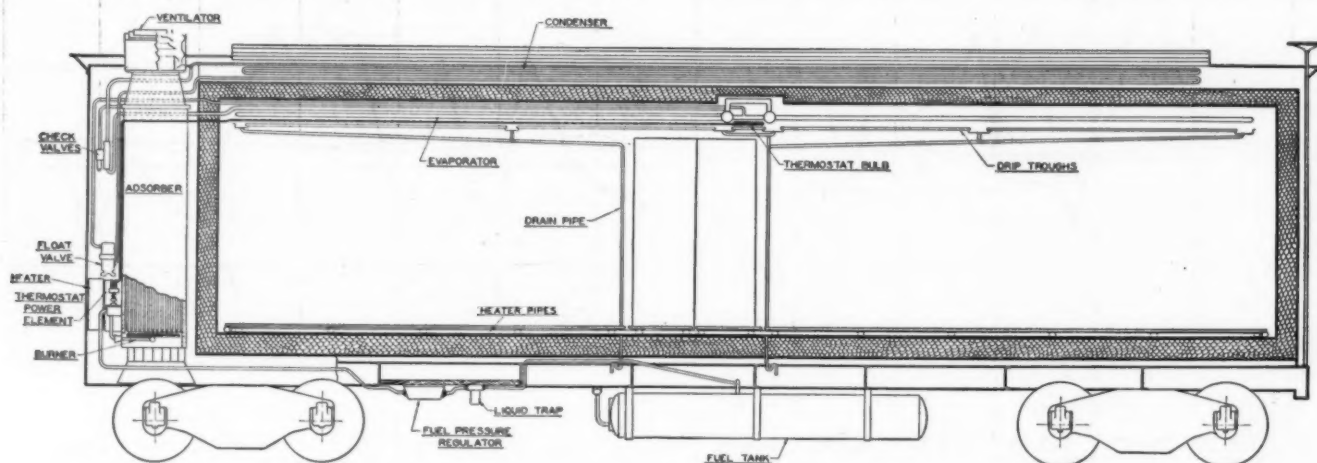
SAFETY Refrigeration, Inc., a subsidiary of the Safety Car Heating and Lighting Company, New York, recently placed in service 50 all-steel Silica Gel refrigerator cars in which a lading increase of 48 per cent has been attained over the ice-bunker type of car because of the overhead system of refrigeration and which are equipped with an automatic heating system that is controlled by both the outside temperature and the temperature inside the car itself. The operation of the Silica Gel system and the heating apparatus is regulated by a control mechanism not used heretofore in the Silica Gel refrigeration cars and which makes possible the transportation of perishable commodities at any temperature, regardless of outside weather conditions.

Thermostat Control

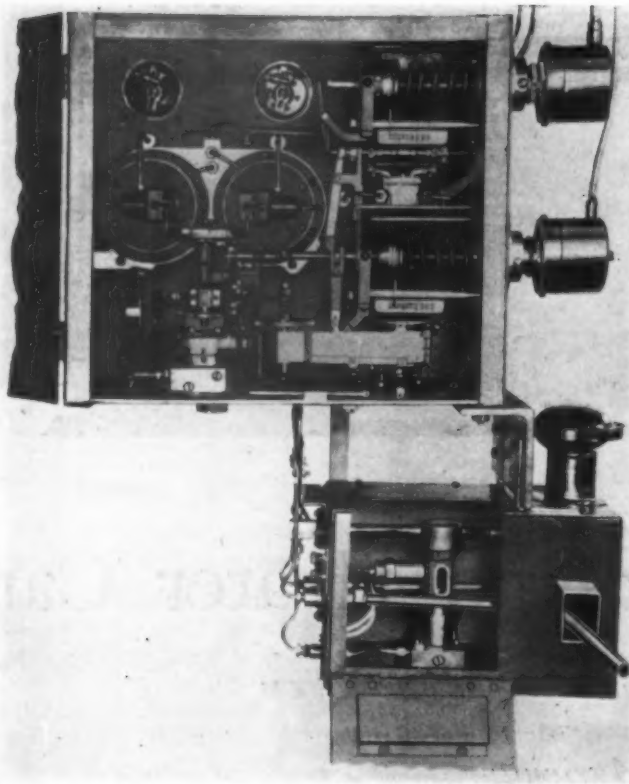
The temperature within the car is controlled by two thermostats which are a part of a control mechanism, a new development and installation in the 50 all-steel

cars. One of these thermostats has its temperature-responsive bulb mounted near the ceiling at the center of the car, while the other has its bulb so located that it is affected only by atmospheric temperatures. The former, operating in conjunction with the control apparatus located in the adsorber compartment, controls refrigeration by cutting off the flow of gas to the Silica Gel adsorbing apparatus when the car temperature has reached that at which this thermostat is set. It also controls the supply of gas to the heater by acting in conjunction with the thermostat which is affected by the atmospheric temperature.

If the lading is such that it requires combination heater and refrigerator service, the heater may be placed in operation and both thermostats set for the desired carrying temperature. Under these conditions the control will permit the refrigerating apparatus to function only if the car temperature is above the desired temperature. The control is so arranged that if the outside and car temperature falls 5 deg. below that at which



The Silica Gel System Applied to a Refrigerator Car



Control Thermostats and Temperature Recording and Timing Device

the thermostats are set, the heater will automatically operate. Both heating and refrigerating systems cannot be in simultaneous operation.

When refrigeration service only is required the fuel supply to the heater is cut off and one thermostat is set for the desired car temperature. When this temperature is reached the supply of fuel is cut off from the apparatus and the refrigeration process is suspended until the temperature rises again when operation is resumed.

The Heating and Refrigerating Systems

The heating system consists of a radiating coil placed under the floor racks of the car and connected to a heating coil placed in the adsorber compartment. This coil is heated by the same fuel which operates the re-

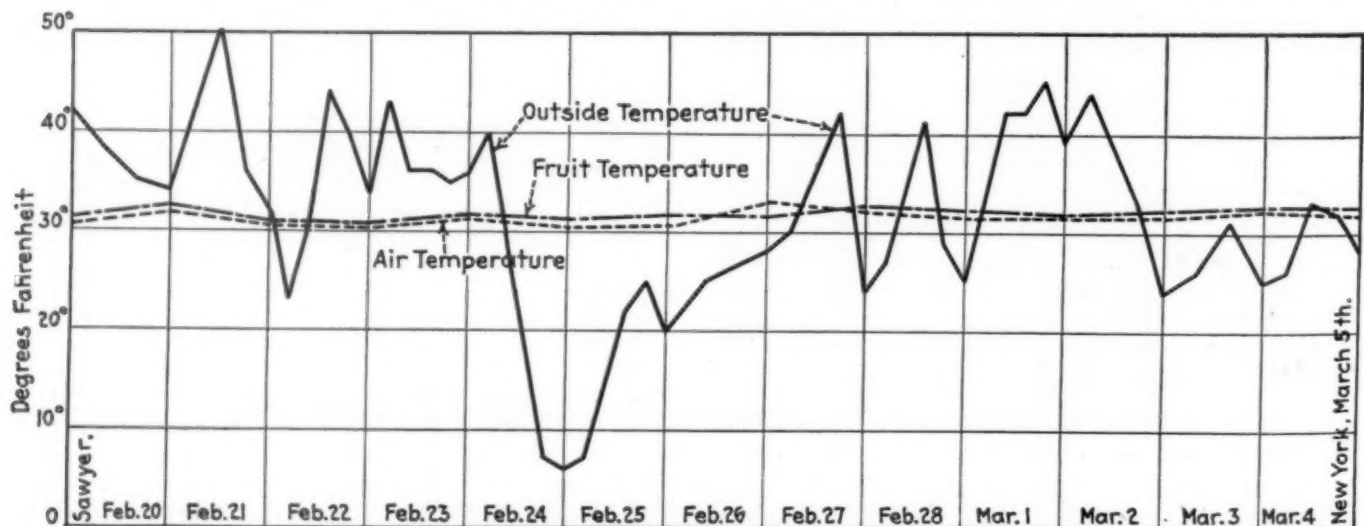
frigerating system, the operation of the burner being controlled by a thermostat. The heating system is filled with liquid which will not be affected by low temperatures. To prevent heat leakage into the refrigerating compartments from the heating system when it is not in use, a valve is placed in the fluid line so that no flow of the heated fluid can take place. This valve is interlocked with the heater burner so that the burner cannot be turned on during the period when the fluid valve is closed.

The Silica Gel refrigeration system is identically the same as described in the *Railway Age*, February 18, 1928. It consists essentially of three main parts; namely, the adsorber (containing the silica gel), an evaporator and a condenser, and may be briefly described as being identical to a compression type machine with the compressor replaced by the adsorber, the adsorption of the refrigerant vapor by the silica gel corresponding to the suction stroke of the compressor and the activation of the silica gel to the discharge stroke.

The application of the system is shown in one of the illustrations. The evaporator, consisting of a series of parallel pipes running longitudinally in the car and connected to a transverse header and containing liquid sulphur dioxide, is suspended close to the ceiling of the car. The condenser is of the air-cooled type and consists of a series of pipes mounted on the roof of the car and protected from the direct rays of the sun by a cover. The two sections of the adsorber are placed at one end of the car and outside the insulated car body. The groups of vertical tubes containing the silica gel are placed in insulated fireproof casings provided at the top with ventilators to give a rapid upward movement of air and the products of combustion from the gas burners. The burners which furnish the heat for activating the silica gel are placed below the tubes. The operation of the system is effected entirely by lighting and extinguishing the burners alternately at the proper intervals. The period of heating is of about 30 min. duration and the interval between successive heating periods is about 2½ hr. for normal operation.

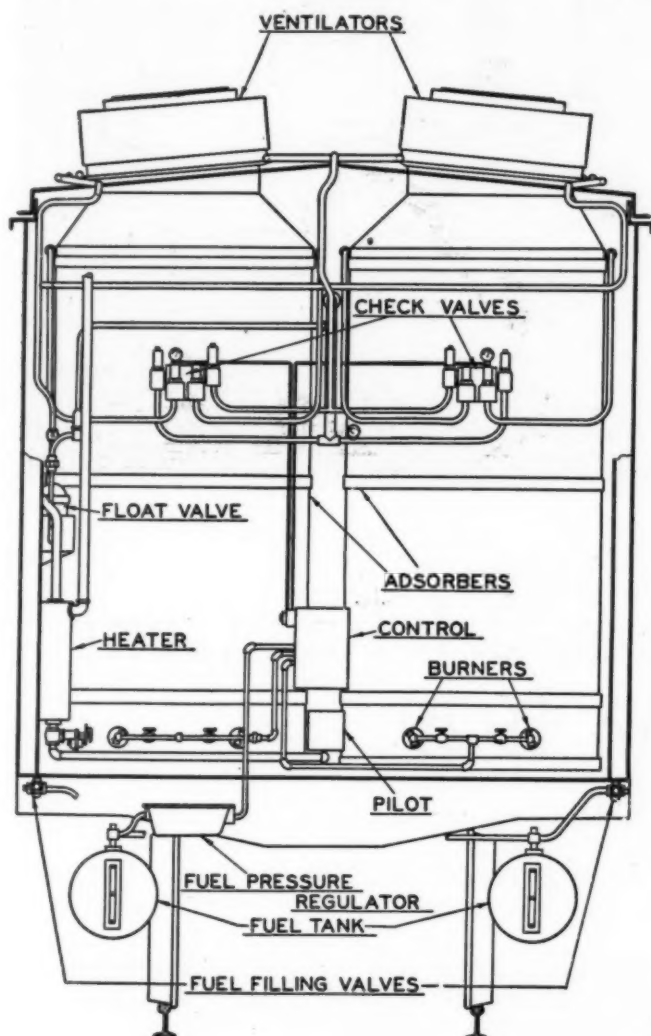
Car Tested by U. S. Dept. of Agriculture

During a recent test conducted under the direction of the United States Department of Agriculture both the heating and refrigerating apparatus on one of the new all-steel cars functioned automatically during a trip from Yakima Valley, Wash., to New York. The car



Temperature Observations Taken on a Load of Pears from Yakima Valley, Wash., to New York

was loaded with 756 boxes of pears, from cold storage, placed in the car at a temperature of 31 deg. The air temperature of the car was 32 deg. at the time of loading, the thermostat being set to maintain that degree of temperature and, as seen from one of the illustrations, that temperature was maintained throughout the entire journey across the continent, including two days



End Elevation of the Car Showing the Arrangement of Equipment

that the car was held in the Jersey City yards. The outside temperature en route ranged from about 50 deg. during the first part of the journey to about 6 deg. after the car had been on its way a few days.

The car carried and perfectly refrigerated the 756 boxes of pears as against 511 boxes, the average capacity of the ice-bunker type of car. The additional 245 boxes represented a lading increase of 48 per cent, the increase being made possible by the relative compactness of the silica gel apparatus and the overhead system of refrigeration.

Since the first silica gel refrigerator car was placed in operation several years ago it is interesting to note that up to March 31, 1930, the cars have been used for 851 shipments, amounting to approximately 23,000,000 lb., valued at about \$8,000,000, with no loss to shipper, consignee or carrier. During this period the cars have travelled approximately 2,300,000 miles of which nearly 60 per cent have been loaded and about 40 per cent empty.

M. P. Pensions and Insurance Advantageous to Employees

AT the close of 1929 a total of 8,811 employees of the Missouri Pacific had taken advantage of insurance provided for them, while on March 1, 1930, 925 employees were on the pension roll. The railroad arranges for and pays a part of the cost of the group insurance which makes it possible for the employees to secure protection at rates cheaper than they could obtain otherwise. The premium for this protection in 1929 amounted to \$306,475 on a total of \$18,777,000 of life insurance in effect. Claims paid during the year totaled \$283,002, of which \$182,550 was for life insurance, \$84,599 was for accident and sick insurance and the remaining \$15,852 was for accidental death and dismemberment claims.

In addition to this form of insurance, the railroad has allowed a number of accident insurance companies the privilege of payroll deduction, placing opportunities for additional insurance protection within reach of the employees. Deductions from 1929 payrolls for this purpose totaled \$314,933. An agreement with another life insurance company offers the employees a "salary saving" insurance, a monthly payment of premiums at lower rates than would be possible except through the co-operation of the railroad. This arrangement went into effect in June, 1929, and the deductions for the balance of that year totaled \$37,808. That this form of insurance is meeting with increasing favor is shown by the fact that the deductions for December alone were \$9,723.

On January 1, 1928, a pension system was inaugurated and at present the monthly pension roll is approximately \$53,673. Under the pension plan all officers and employees, upon attaining the age of 70 years, are automatically retired from service. With the present rules, which became effective on July 1, 1928, employees who, at the date of retirement, have been continuously in the service 25 years and who have given their entire time on the regular tour of duty can be pensioned. A physical examination is required of employees under 70 years old who request retirement with a pension allowance solely because of incapacity and 25 or more years of continuous service, and special effort is made to provide suitable employment for those not fully qualified to perform the duties of their regular positions.

When the compulsory retirement age rule was put into effect, the management realized that there would be a great many old men without 25 years' service, who would be forced to retire and in order to provide some aid for such employees, there was incorporated in the present rules a provision that any officer or employee who entered the service prior to July 1, 1917, and who has been in continuous service less than 25 years and whose name appeared on the payroll subsequent to January 1, 1927, may, upon reaching the age of 70, be pensioned.

The board of pensions of the Missouri Pacific Lines consists of seven members who serve without compensation and who are appointed by the president of the road. They have power to make and enforce rules and regulations for the efficient operation of the pension department and to determine the eligibility of the employees to receive pension allowances. This same board also determines the conditions under which such allowances shall be made.



The Erie Reconditions Many Packages at Its New York Reconditioning Shop

Loss and Damage is 2.4 Per Cent Greater in 1929

Fresh fruits, melons and vegetables are responsible for 27.8 per cent of the total payments

FREIGHT loss and damage payments, as reported by 180 carriers representing 95 per cent of the railroad mileage of the United States and 60 per cent of the Canadian mileage, increased 2.4 per cent, or \$875,723, in 1929, to a total of \$37,432,966. These figures include payments on carload shipments, which increased 3.4 per cent, or \$927,442, to \$28,175,642 and those on less than carload shipments which decreased 0.6 per cent, \$51,719 to \$9,257,324.

An analysis of the causes shows that the increases in the three major damage items, rough handling, unlocated damage and concealed damage, exceed the total increase for the account as a whole, the amount of increase for these three items being \$1,747,522. Besides these causes, only one other, freezing or heater failure showed an increase, the amount being \$264,638 or from \$630,227 to \$894,865. These increases were offset by substantial decreases in delay, defective equipment, losses, robberies, etc. Of the rough handling items in loss and damage, concealed damage was far greater in 1929 than it was seven years ago, the amounts being \$1,510,351 in 1922 and \$3,029,399 in 1929, whereas concealed loss decreased from \$1,319,058 in 1921, to \$177,914 in 1929.

The allocation of payments according to commodities shows that fresh fruits, melons and vegetables were responsible for 27.8 per cent of the total payments. No other commodity approached this percentage, the next highest being livestock which took 7.4 per cent of the

total, new furniture 5.5 per cent and automobiles 4.2 per cent. A division according to causes allocates \$5,921,059, or 15.8 per cent, to loss, \$28,910,034 or 77.2 per cent to damage, and \$2,601,873 or 7 per cent to delay.

Fruits and Vegetables Cause Increase

While a comparison of 1929 with 1928 shows an increase of 3.4 per cent in all payments, a comparison of 1929 with 1922 shows a decrease of 22.2 per cent, or from \$48,084,995 to \$37,432,966. However, this decrease has been accompanied by an increase of 19.1 per cent in the payments on fresh fruits and vegetables, or from \$8,453,324 to \$10,220,776. Further evidence of the significance of fresh fruits and vegetables in relation to the account as a whole is indicated in the fact that while the general damage to all commodities increased 28.9 per cent or from \$15,175,305 to \$19,555,388, damage to fresh fruits and vegetables increased 132 per cent or from \$2,799,805 to \$6,502,332. In contrast, delay and temperature failures to fresh fruits and vegetables have shown marked decreases as a result of concentrated efforts on the part of the carriers, the decreases being 38.7 per cent and 35.1 per cent respectively.

It is also of interest to note that while fresh fruits and vegetables represent less than 2 per cent of the entire tonnage moved and less than 2 per cent of all cars loaded, the loss and damage to these commodities is 27.8 per cent of all loss and damage. In addition, while the cars loaded

with all commodities increased from 43,207,561 in 1922 to 52,789,789 in 1929, or 22.2 per cent, the cars loaded with fresh fruits and vegetables increased from 854,103 in 1922 to 1,068,666 in 1929 or 25.1 per cent, approximately the same rate, while in contrast with this relationship there was a decrease of 22.2 per cent in the payments on all commodities and an increase of 19.1 per cent in payments on fresh fruits and vegetables. While total loss and damage in 1929 was \$875,723 more than in 1928, the loss and damage to fruits and vegetables was \$959,856 greater in 1929 than in the previous year. Of the increases in the entire account for 1927 and 1928, the increase in rough handling and unlocated damage was \$1,571,815 of which \$1,275,807 or 81.2 per cent was in fresh fruits and vegetables, \$222,980 was in automobiles, and \$188,601 was in livestock. These three contribute the entire increase in rough handling and unlocated loss in 1929. A comparison of the loss and damage per car of fresh fruits and vegetables with other commodities that are more perishable reflects still more unfavorably on fresh fruit and vegetable payments. Figures for 1929 are not yet available, but in 1928 fresh meat payments were only \$1.60 per car, livestock \$1.82, clay products \$4.96, and eggs \$6.92, while fresh fruit and vegetable payments were \$8.59 per car in 1928 and \$9.56 per car in 1929. Claims on other commodities are as follows:

Commodity	No. of Cars Originated	Loss and Damage	L. & D. per Car—1928
Coal and coke	8,333,320	\$1,170,827	\$.14
Cotton	308,895	\$ 81,896	\$.26
Flour and mill products.....	934,254	\$1,024,794	\$ 1.10
Grain	1,424,627	\$1,644,491	\$ 1.15
Agricultural implements	134,515	\$ 148,610	\$ 1.10
Autos and trucks	883,851	\$1,161,026	\$ 1.20
Fresh meat & packinghouse products	374,231	\$ 587,868	\$ 1.60
Livestock	1,375,485	\$2,501,808	\$ 1.82
Canned goods	211,428	\$ 388,571	\$ 1.84
Butter, cheese and dairy products....	98,189	\$ 215,699	\$ 2.18
Machinery, hardware, etc.	210,145	\$ 844,330	\$ 4.02
Clay products (sewer pipe and drain tile)	143,713	\$ 712,041	\$ 4.96
Furniture (new)	123,094	\$ 635,300	\$ 5.16
Eggs	56,312	\$ 389,706	\$ 6.92
Fresh fruits and vegetables.....	1,082,088	\$9,291,649	\$ 8.59

An analysis of the fresh fruit and vegetable statistics shows that while the average loss and damage per car



The Bulged Top Pack Contributes to the Carrot Payments of \$25.61 Per Car



When Hamper Covers Are Not Wired Tightly Cucumbers are Damaged

was \$9.56 on 1,068,666 cars originating, the amount per car of tomatoes was \$31.91 in contrast to \$1.91 per car of white potatoes. Some of the large amounts include \$25.61 per car of carrots, \$19.56 per car of grapes and \$19.20 per car of cucumbers. Other amounts are shown in the table.

What Is Being Done?

Much effort has been extended by the Freight Claim Division of the American Railway Association, the claim conferences, the Freight Container Bureau of the American Railway Association, the inspection bureaus and other interested parties to reduce claims. The Freight Container Bureau has assigned one of its engineers to a

Fresh Fruit, Melon and Vegetable Loss and Damage Per Car

Commodity	No. of Cars Originated	Loss and Damage	L. & D. per Car
Apples	103,256	\$ 787,000	\$ 7.62
Asparagus	2,102	\$ 10,221	\$ 4.86
Cabbage	43,742	\$143,091	\$ 3.27
Cantaloupes	28,154	\$459,935	\$13.87
Carrots	11,931	\$265,740	\$25.61
Cauliflower	9,938	\$163,532	\$16.46
Celery	25,438	\$153,312	\$ 6.03
Cucumbers	7,465	\$143,091	\$19.20
Grapes	65,849	\$1,287,818	\$19.56
Grape Fruit	25,065	\$173,753	\$ 6.93
Lemons	16,412	\$102,208	\$ 6.23
Lettuce	53,168	\$817,663	\$15.38
Mixed Vegetables	32,353	\$296,402	\$ 9.16
Oranges	97,521	\$612,363	\$ 6.28
Onions	36,584	\$173,753	\$ 4.73
Peaches	35,417	\$361,727	\$10.21
Pears	20,706	\$259,519	\$12.53
Peppers	3,338	\$ 40,883	\$12.25
Plums and prunes	27,665	\$143,091	\$ 5.17
Potatoes (white)	251,968	\$480,376	\$ 1.91
Potatoes (sweet)	21,622	\$ 81,766	\$ 3.78
Spinach	10,352	\$ 81,766	\$ 7.91
Strawberries	18,731	\$132,870	\$ 7.09
Tomatoes	31,710	\$1,011,857	\$31.91
Turnips	2,115	\$ 10,221	\$ 4.83
Watermelons	52,837	\$591,805	\$11.18

year's study of loading and bracing methods for sewer pipe, drain tile and allied products, while a joint committee composed of the chairmen of the Loading committee of the Transportation Division, the Freight Claim Prevention committee of the Freight Claim Division, and the Freight Handling Service committee of the Transportation Division and the manager of the Central Weighing and Inspection Bureau have been appointed to advise with the engineer. For some time a joint committee consisting of representatives of the Freight Claims

and Operating divisions has been considering claims paid in connection with shipments of fresh fruits and vegetables and has recommended that, for the purpose of securing uniformity of practice at all destination points, the carriers should determine the extent and cause of damage at the time of unloading, should recouper and place all damaged packages in the best possible condition before delivery, should salvage packages that cannot be reconditioned and should place bad-order notations on delivery documents to cover specifically the damage to the commodity.

Another step to eliminate lack of attention to the extent of the damage and the inadequate supervision of shipments at destination appears in an agreement entered into by destination lines at New York for the handling of broken packages of fruits, melons and vegetables on March 17, 1930. It was decided that the interests of the receivers and carriers are best served if the carriers salvage all broken packages of fresh fruit and vegetables which will not be accepted as perfect and that at all pier and station deliveries in New York and the New Jersey terminal area, all broken or part-out packages which the carrier is unable to deliver to the consignee and for which it is unable to obtain a clear receipt, will be held by the delivery carrier and sold for the account of whom it may concern. The consignee shall be obliged to sign for the balance of the car as in good condition prior to its removal from the delivering station, while a joint unloading report showing the number of damaged packages retained by the carrier will be prepared and signed by the representatives of the consignee and the agent.

Draft Gear Manufacturer is Charged with Unfair Methods

WASHINGTON, D. C.

THE Federal Trade Commission on April 12 made public a complaint issued on April 3 charging the Waugh Equipment Company, Chicago, and Arthur Meeker, Frederick W. Ellis and J. B. Scott with employing unfair methods of competition in using the traffic of Armour and Company, and subsidiaries in the solicitation of draft gear business from railways for a company said to be controlled by officers and employees of Armour and Company. The complaint is similar to that issued in December against the Mechanical Manufacturing Company and traffic officials of Swift & Co., on which the commission has been holding a series of hearings.

According to the allegations of the complaint the Waugh company has outstanding 7,000 shares of common stock and 3,000 shares of preferred stock and a majority of the common stock is owned or controlled by officials and employees of Armour and Company, including F. Edson White, president, Arthur Meeker, former vice-president, F. W. Ellis, vice-president in charge of traffic and J. B. Scott, his assistant and general manager of the Armour Car Lines. Respondents are given until May 9 to show cause why an order should not be entered requiring them to cease and desist from the violation of the law charged. Other allegations are:

"The said respondent corporation, on or about August 1, 1924, purchased and took over the business theretofore conducted by the Waugh Draft Gear Company, an Illinois corporation, located at Chicago, Illinois, and in payment for said business issued to said Waugh Draft Gear Company 2,000 shares of its common stock and 2,000 shares of its preferred

stock. Among the products manufactured, sold and distributed by the said Waugh Draft Gear Company was a draft gear known and described under the trade name 'Waugh' which said gear was obsolete and not suitable for use on freight cars, and which had been sold in limited quantities in previous years by the said Waugh Draft Gear Company to a very few railway companies, and at the time of the organization of the said respondent corporation, the said Waugh Draft Gear Company was not conducting its business at a profit, and the sale of its said gear had substantially diminished because it did not meet the strict specifications and requirements of the railway companies of the United States. Said respondent corporation has, since the date of its organization, purchased and acquired licenses to manufacture other draft gears for use on freight and passenger cars, some of which were in use while others were not yet established or recognized as efficient draft gears. Said respondent corporation in the course and conduct of its said business, * * * since the date of its organization until on or about January 1, 1927, sold and distributed draft gears under the said trade name of 'Waugh,' but since said date said respondent corporation has sold and distributed, and now sells and distributes various sizes and types of draft gears under the trade name of 'Waugh-Gould.'

"The promoters and officials of said respondent corporation, on or about September 1, 1924, entered into an agreement or understanding with said individual respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott, whereby said individual respondents agreed and promised to use the volume of traffic of said Armour and Company and its subsidiary companies in the solicitation of draft gear business from said railway companies in behalf of said respondent corporation as hereinafter set forth, and in consideration of said agreement or understanding said promoters or officials of said respondent corporation assigned and transferred to said individual respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott, 1,666 shares of common stock of said respondent corporation, no consideration being received from said individual respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott in return for the issuance and transfer of said stock to them by the said respondent corporation and/or its promoters and officials other than herein set forth. Said understanding or agreement was entered into by said individual respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott without the knowledge of Armour and Company and its stockholders.

"Said respondent corporation in the course and conduct of its said business during the past six years, pursuant to the agreement or understanding set forth in Paragraph Five hereof, and in cooperation with the said respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott, as traffic department and Executive officials of the said Armour and Company, has sought to induce and compel, and has induced and compelled various railway companies to purchase draft gears and other railway equipment manufactured and/or sold by said respondent corporation, in preference to draft gears and other equipment of equal or higher quality manufactured and sold by competitors by the following methods:

- (a) By promises and assurances of freight traffic to be shipped over the lines of said railway companies by Armour and Company and its subsidiary corporations,
- (b) By promises and assurances of an increased volume of freight traffic to be shipped over the lines of said railway companies by Armour and Company, and its subsidiary corporations, and
- (c) By threats of withdrawal of freight traffic from the lines of said railway companies by said Armour and Company and its subsidiary corporations, if said railway companies would not purchase the said draft gears and other railway equipment manufactured and/or sold by said respondent corporation.

"Said individual respondents Arthur Meeker, Frederick W. Ellis and J. B. Scott, pursuant to the agreement or understanding * * * and at the request of the officials and promoters of said respondent corporation, have cooperated with and assisted the said respondent corporation in the sale and distribution of its said draft gears and/or other railway equipment to various railway companies * * * particularly by utilizing their official positions in the said Armour and Company to induce and compel the officials of railway companies to give undue preference to draft gears and/or other railway equipment manufactured and/or sold by the said respondent corporation by means of promises of freight traffic from said Armour and Company and its subsidiary corporations, and threats of withdrawal of said traffic if the said railway companies would not purchase draft gears and/or other railway equipment manufactured and/or sold by said respondent corporation."

Edward S. French Heads B. & M.

*Permanent successor to the late George Hannauer
replaces Acting President Perkins*

EDWARD S. FRENCH, operating head of several independent short line railroads in northern New England and president of a group of waterfront and warehouse rail terminals at Boston, Mass., was on April 9 elected president of the Boston & Maine. Mr. French thus becomes the permanent successor to the late George Hannauer, replacing Acting President Thomas Nelson Perkins who has been executive head of the B. & M. since Mr. Hannauer's sudden death on November 2, 1929. Mr. Perkins, who was recently elected a director of the Southern Pacific, will continue his active association with the Boston & Maine as chairman of its board of directors.

In connection with this latter the B. & M. Board said of Mr. Perkins: "The board desires at this time to make public acknowledgment of his services as acting president. In the five months since the death of Mr. Hannauer, Mr. Perkins, although a busy man of large affairs, has given the railroad practically his full time, on the road and at his desk, at great personal sacrifice. Matters of prime importance have been successfully concluded, have been well started or advanced, under his direction."

Mr. French has had a wide range of interests and activities from practically all of which, the announcement states, he will now resign. He has been president of the Montpelier & Wells River and of the Barre & Chelsea since 1926; vice-president of the St. Johnsbury & Lake Champlain since 1925; president of the Springfield (Vermont) Terminal Railway since 1920; president of the Mystic Terminal Company, comprising the Boston waterfront terminals serving the B. & M. since 1927, and he has been for several years a consultant for railroads in Maine. In addition to the foregoing railway interests, Mr. French is a director of the Rock of Ages Granite Corporation, vice-president and director of the Woodbury Granite Company, Burlington, Vt., and of the John T. Slack Corporation, Springfield, Vt.

"In Mr. French," the announcement of the election states, "the board believes it has secured for the railroad a president who will command the confidence of

stockholders, the respect and co-operation of officers and employees, and the confidence and support of the New England public and its regulatory bodies. These he has consistently won in connection with the various railroad and business enterprises which he has handled so successfully. With his ability and with his close contact and familiarity with the conditions and needs of the Boston & Maine and its territory, we believe he will be able to contribute substantially to the further development of the new Boston & Maine. Mr. French

takes over a loyal and effective organization functioning under an able corps of officers, which has carried on well during the interim."

Edward S. French was born at Portland, Me., December 1, 1883; he received his early education in the public schools of Somerville, Mass., and at the Somerville Latin School. Upon being graduated from the latter in 1902 he entered Dartmouth College and was graduated with the class of 1906. During high school and college vacations and for a year after leaving Dartmouth Mr. French was employed by the Boston & Maine. These intermittent assignments covered a wide range of operating and traffic department tasks and, when he was but little more than a year out of college, led to his appointment as general manager of the White River Railroad in

1908. He became its president in 1920.

In this latter year he was also appointed receiver for the Springfield (Vermont) Electric Railway which he then reorganized as the Springfield Terminal Railway, becoming president of the latter. Meantime, he had been extending his business interests in the granite industry and in other lines, and had entered upon a varied and extensive business career. It was, therefore, to Mr. French that the industries and communities served by the St. Johnsbury & Lake Champlain, the Barre & Chelsea and the Montpelier & Wells River turned when the problems of branch line operation pressed acutely in 1925-26. His management of these properties saved the railroads and their service to the communities under local operation.

Mr. French assumes the presidency of the Boston



Edward S. French

& Maine when its outlook is more promising than at any other time during the past two decades. Under the successive administrations of Chairman Homer Loring, President Hannauer and Acting President Perkins there has been consummated one of the most comprehensive of recent railway physical and financial rehabilitation programs. Results of this latter are rapidly being realized, as outlined in President Hannauer's obituary, published in the *Railway Age* of November 9, 1929, page 1095. Since that time, however, the rapidly improving financial position of the Boston & Maine culminated in the payment of dividends on its common stock. This disbursement, made on April 1, was the first in 17 years. With it dividends are now being paid on all classes of securities. Thus the board's statement that Mr. French assumes charge of a "new Boston & Maine."

Commissioner Eastman on Holding Companies

WASHINGTON, D. C.

COMMISSIONER Eastman, of the Interstate Commerce Commission, on April 10 concluded his testimony before the House committee on interstate and foreign commerce in connection with its investigation of the control of railways by holding and investment companies with a brief discussion of possible legislation to bring activities of holding companies within the scope of government railway regulation. He pointed out that the commission in its recommendation of the investigation had not undertaken to say what the remedy is and said that he would feel safer in making such a recommendation after a thorough investigation by the committee. However, he said that it seemed to him that there should be control by the commission over actual unifications, however brought about, including indirect acquisitions of stock through holding companies or in any other manner, and he referred to the New York law prohibiting stock corporations, other than gas, electrical or street railroad corporations, from acquiring more than 10 per cent of the stock of a gas or electric corporation organized under the laws of the state without the approval of the public service commission.

He also quoted from a report of a special committee of the New York legislature suggesting some amendments to the law, including provision for a system of most detailed reports to the commission regarding the holding of utility securities. He said that access to the books of affiliated companies may have a most beneficial effect even if the commission is not able always to check them in detail. Mr. Eastman added, however, that he recognized that there might be some difference between the power of a state commission relating to the ownership of securities issued under the state law and those of Congress.

Commissioner Eastman replied affirmatively to a question by Representative Rayburn if it were not his conception that the matters involved should be probed to the bottom with the idea of developing the policy of Congress and its power to deal with the problem.

In reply to another question Mr. Eastman said that, while he did not think the commission's consolidation plan should be regarded lightly, Congress did not intend that its promulgation should settle the question of

what consolidations should be permitted. The commission may modify it and the public interest in any particular application must be shown at a hearing on each individual application.

Chairman Parker of the committee said at the conclusion of Mr. Eastman's testimony that further hearings probably will not be held until returns have been received to the questionnaires issued to the railroads and about 700 holding and investment companies.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 5 showed a considerable improvement as compared with earlier weeks. The total was 907,928 cars, a decrease of only 50,297 cars as compared with the corresponding week of last year, whereas in the preceding week the loading was 74,000 cars less than last year. As compared with 1928 the decrease was only 11,424 cars. Loading of grain and coal showed increases as compared with last year but there was a reduction of 28,966 cars in miscellaneous freight and of 12,215 cars in merchandise. The Pocahontas district showed an increase as compared with the corresponding week in 1929 and 1928. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, April 5, 1930

Districts	1930	1929	1928
Eastern	209,166	228,172	218,162
Allegheny	187,099	198,333	189,644
Pocahontas	50,253	49,231	47,858
Southern	144,699	157,616	155,609
Northwestern	109,096	113,076	111,209
Central Western	132,125	132,643	124,142
Southwestern	75,490	79,154	72,728
Total Western Districts	316,711	324,873	308,079
Total All Roads	907,928	958,225	919,352
Commodities			
Grain and Grain Products	40,333	35,731	39,371
Live Stock	22,459	23,604	23,340
Coal	134,036	132,317	134,163
Coke	10,495	11,995	9,812
Forest Products	56,961	69,104	65,647
Ore	10,505	11,124	9,144
Mdse. L.C.L.	254,927	267,142	263,317
Miscellaneous	378,212	407,208	374,558
April 5	907,928	958,225	919,352
March 29	885,159	969,196	948,743
March 22	875,542	962,400	950,194
March 15	881,187	958,601	942,572
March 8	873,548	947,539	951,556
Cumulative total, 14 weeks	12,177,939	13,111,753	12,711,548

The freight car surplus for the last week in March averaged 465,920 cars, a decrease of 12,672 cars as compared with the preceding week. This included 206,066 coal cars, 203,590 box cars, 29,122 stock cars and 14,421 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended April 5 totaled 58,254 cars, an increase over the previous week of 863 cars and a decrease of 5,207 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
April 5, 1930	58,254	39,059
March 29, 1930	57,391	36,503
March 22, 1930	58,958	36,446
April 6, 1929	63,461	43,923
Cumulative Totals for Canada		
April 5, 1930	796,848	517,478
April 6, 1929	868,790	605,044
April 7, 1928	873,759	557,578

Last Hearings in First "Reciprocity" Case Begun

Federal Trade Commission hears defense in complaint regarding use of traffic in selling to railroads

ON Monday, April 14, two days after the Federal Trade Commission launched its second "reciprocity" buying suit by charging a second draft gear maker (the Waugh Equipment Company) and officers of a second packer (Armour & Co.) with the wrongful use of traffic to influence railway purchasing, the government began hearing the last evidence in its first "reciprocity" case by giving the Mechanical Manufacturing Company and officers of Swift & Co. an opportunity to answer the complaint brought against them for alleged unfair methods of selling draft gear and other equipment to railroads. The hearing was held in Chicago and was again attended by observers of the Interstate Commerce Commission.

Although the suit hinges upon the use of Swift & Company's traffic to influence railway purchases, traffic was seldom referred to in the first day's hearing except when, at the outset, the attorney for the respondents entered motions to dismiss the suit on the grounds that the unfair competition clause of the Federal Trade Commission Act had not been violated, that the evidence presented by the government failed to prove the charges of unfair competition and that the evidence showed that the case was moot before the complaint was filed. Except for these references, the first day was largely given over to consideration of the quality of the Durable draft gear, the respondents presenting Prof. P. C. Huntley of Armour Institute of Technology, Chicago, to testify as to the merits of the gear and the government spending the remainder of the day in cross-examining this witness concerning his testimony. Frequent reference was made to A. R. A. draft gear reports and to test results of the Rock Island in this hearing.

Prof. Huntley, questioned by the attorney for the Mechanical Manufacturing Company, said that no gear has been completely developed before being placed on the market. He stated that the larger gear manufacturers own their own laboratories and have kept experimenting to improve their gear. He added also that until the American Railway Association brought out draft gear specifications last June, there was no national standard specification, that each road had its own standard and that the A. R. A. specifications are still tentative. He testified that he tested the Durable gear for the inventor and served the Mechanical Manufacturing Company as a consultant. He concluded that the gear was made on the correct basis and could be made an effective gear and reported to the Mechanical Manufacturing Company that it had a high capacity, was sturdy, did not have excessive weight and could be assembled and placed in the standard A. R. A. pocket. He subsequently made tests of the gear to increase efficiency and sturdiness. He said that the gear was made of good material, using springs of alloy steel and wedges of a good grade of carbon steel.

Prof. Huntley witnessed a laboratory test of the gear made by the Wabash for the purpose of comparison and said that the results compared very well with those of other makes which he had seen tested. It required a 29-in. drop of a 9,000-lb. hammer to close the gear, as compared with 17 or 18 in. for the average gear while, some classes of gear, he said, close under a drop as low as 12 in. He stated that the Durable gear has been developed faster as to efficiency and design than most gear, and when asked if any gear had passed all the A. R. A. tests at Purdue University, he replied that none had. He said that the Durable gear, as tested in October, 1929, met the A. R. A. specifications, and when asked whether the gear had been susceptible of sticking, replied that in his tests it had never failed to release, while he had tested gear about which the same statement could not be made.

Prof. Huntley said the Durable gear was a compound gear with a low pressure end to absorb the lighter impacts and a high pressure end to absorb the higher shocks, and named four gear on the market which, he testified, would not meet the minimum capacity test of the A. R. A. while the Durable gear, he said, would meet that test. He said the W. H. Miner laboratory which the Rock Island used in its tests was not suitable for testing the Durable gear, that the galling and scoring of the Durable gear, reported in the Rock Island's tests, is less likely to occur in service than in the laboratory, and that sticking in service is also less likely to occur.

Prof. Huntley was asked by the government if a gear that had broken in a capacity test could fulfill the endurance test of the A. R. A., and he answered no, with the qualification that the endurance test must be made on the gear used in the capacity test. He testified that the Durable gear had more than 20 independent friction joints and that only one gear now on the market had more joints. When asked if he could agree with the statement in the Rock Island's report that the failure of the housing on two or three Durable gear tested and the breaking of one gear plate indicated that the quality and soundness of the gear were not satisfactory, he said, "Yes, if the tests were made correctly," adding that it was his opinion that the gear were not properly assembled or the pin would not have fallen out of the housing, as reported.

When asked if he agreed that the "galling and cutting of the spring seats would indicate the gear were too soft and ductile for service," as reported in the Rock Island report, he answered in the affirmative, but added that the gear had been changed after that to improve the workmanship. His attention was then called to the statement in the Rock Island's report that the sticking of the gear had been encountered and he would take the word of Mr. Sedwick, the Rock Island's engineer of tests. When referred to the statement that the gear tested by the Rock Island showed

irregularity, he said that all friction gear are erratic in travel and, when asked if that was desirable, he said no. He stated that the material first used in the gear was not good enough but that the metal was improved. Reference was then made to the test conducted by the Wabash in the Armour Institute laboratory and particularly to a statement made by the assistant to the superintendent of motive power of the Wabash that the Armour Institute laboratory equipment was in such bad shape that an accurate test could not be made, to which he took exception. He added that the gear tested by the Wabash was an experimental gear. When asked to name the other gear which he had seen stick under test, he mentioned two gear not now on the market, but declined to mention other gear and did not remember noticing failures of this kind in other makes he had tested last year. He was then referred to his previous testimony that the improved Durable gear would pass the A. R. A. specifications, and testified that his tests did not apply to endurance, recoil and regularity of operation.

Peter A. Campbell, master mechanic of the Chicago Junction, a belt line operated by the New York Central, testified that six Durable gear were applied to locomotives in July or August, 1929, and have since been inspected monthly with no failures or expense since application.

W. G. Herpich, a buyer of cartons, labels and paper for Swift & Co., testified regarding his relations with the Sutherland Paper Company of Kalamazoo, Mich., a customer of Swift & Co., which company was the subject of testimony in earlier hearings, purporting to show that it had been instructed to route traffic against the Northern Pacific as a result of the latter's failure to buy Durable draft gear. He explained that a customer of Swift & Company in Louisiana was in a hurry for cartons and that he had asked his traffic department to advise the routing that would expedite shipment. The traffic department then inquired if he had carload shipments moving to other points and he thereupon was given routings to various points which he in turn called to the attention of his customer at Kalamazoo. When asked if that was the first time he had received instructions of this character, he said yes, but stated on further questioning that he had occasionally asked the traffic department for routing on cars. The letters instructing the Kalamazoo company how to route shipments to Portland were put in evidence.

H. N. Beeson, president of the Mechanical Manufacturing Company, testified that his company became interested in the draft gear early in 1928. He said the tendency was toward the use of heavier freight cars, and his observations at hump yards indicated the need of a gear designed for heavy as well as light shocks. He stated that officers of his company looked over the inventor's drawings and concluded that the gear could be made and sold for less than other high capacity gear, which he said were selling at that time for \$80 to \$100 per set. He stated that drop tests were first made at Armour Institute and that 10 experimental sets of gear were made and 5 sets applied to Swift cars in 1928. He said that the gear was tested later in the Union Draft Gear laboratory, where it showed up favorably, as well as in a similar test made in switching service.

About 25 sets of the gear were then made and the Chesapeake & Ohio, the Chicago, Milwaukee, St. Paul & Pacific and the Wabash were given some of them in January, 1929, and asked to test them. As a result of these tests, it was decided to make certain changes in the design and composition to improve the gear, which im-

provements were made prior to July, 1929. He testified that the gear tested by the Rock Island had cast steel blocks instead of the improved rolled steel blocks. When questioned by the government, he said that he did not know when the gear were sold to the Rock Island and testified that, except for the cast steel blocks, the gear tested by the Rock Island were substantially the same as the Durable gear made in October, 1929, which Professor Huntley said would meet A. R. A. specifications. When asked how many sets of the Durable gear had been applied to Swift equipment, he said less than 500.

Mr. Beeson was asked by his attorney if his company had received any complaints on the gear sold to the railroads and replied that it had not to his knowledge. He was then asked by the government if he ever replaced any of the gear sold and said he thought so. Later he testified that G. E. Coutant, assistant to the superintendent of motive power of the Wabash, who had tested the experimental gear, said that the Mechanical Manufacturing Company had worked wonders with the gear since the last time he saw it.

W. A. Mayfield, assistant superintendent of transportation of Swift & Co., referring to eggs in storage at Seattle which were alleged in a previous hearing to have been routed against the Northern Pacific, testified that the only eggs shipped East from Seattle were routed over the Northern Pacific, while it was customary to ship eggs from Portland over the Union Pacific because of its shorter route. Concerning fish oil, also alleged to have been routed against the Northern Pacific, he testified that seven cars were shipped over the Northern Pacific in 1928 and six cars in 1929. He then denied that he had promised traffic or promised to increase traffic on railroads buying Durable gear or had threatened to withdraw traffic from roads failing to buy the gear. He also denied having sought to induce railroads to give undue preference to the Durable gear in purchasing and likewise denied all the other charges against him in the Federal Trade Commission's complaint. He said that he and R. O'Hara controlled the routing of the traffic of Swift & Co. and would know if traffic was routed to benefit purchasers of the gear and denied that it had been so changed.

The attorney for the respondent subsequently recalled Mr. Beeson for the purpose of correcting his earlier testimony to show that several improvements had been made in the gear since it was sold to the Rock Island. Mr. Beeson testified that the gear was a better gear in October than in May. A draftsman for the Mechanical Manufacturing Company then recited all of the revisions made in the plans during 1929, with the dates of the changes, and Mr. Beeson testified that these changes were all eventually incorporated in the gear. He said that the changes made after May 21, when the gear were sold to the Rock Island, included changes in the angle of the blocks as well as the adoption of rolled steel in place of cast steel and also the rounding of the corners on the friction blocks and the alterations of specifications requiring changes in the ductility and smoothness of the housing, all of which he said were important to the operation of the gear.

The collection of evidence in the first "reciprocity" case of the Federal Trade Commission affecting railroads closed on Wednesday, with testimony of three rebuttal witnesses. A. H. Harris of the traffic department of Swift & Company, was called by the respondents to refute evidence purporting to show that the Northern Pacific had suffered traffic withdrawals for failing to buy Durable gear, while W. Bohnstengel, assistant engineer of tests of the Atchison, Topeka & Santa Fe, and T. D. Sedwick, engineer of tests of the Chicago, Rock

Island & Pacific, were called by the government to refute testimony purporting to show that the Durable gear had been greatly improved or that certain tests of the gear had not been properly made.

Draft gear specifications proposed for adoption by the A. R. A. at the next convention were also put in evidence by the government. Reverting to earlier testimony concerning the shipping of cooperage from Aberdeen, Wash., Mr. Harris said that instructions issued in 1926 gave 50 per cent of certain Florida consignments to the Northern Pacific until June 5, 1929, after which the instructions eliminated the Northern Pacific for these consignments, but included the Northern Pacific for some shipments to Iowa, which the road had not before received. He said the Northern Pacific also got 16 cars of coconut oil from Portland, Ore., in 1929, as compared with eight cars in 1928.

Mr. Bohnstengel witnessed a test of the Durable gear made by the Chesapeake & Ohio in the Miner laboratory early in 1929 and identified pictures showing the testing assembly which Professor Huntley had stated was not suitable for testing Durable gear. He said the gear was deeply scored and that rough surfaces resulting from such scoring could cause sticking of the gear in service; also that scoring would probably increase the capacity of a gear because of the increased roughness in the friction parts. He said the effect of substituting rolled steel friction parts for cast steel parts would depend upon their composition and that the effect of a large number of friction joints in a gear would depend upon their arrangement, also that the effect of substituting rolled steel friction parts for cast steel parts would depend upon the chemical composition, explaining that a rolled steel part would become rough if not made hard enough.

T. D. Sedwick was asked if the gear he tested properly fitted the pocket in the Miner laboratory and said, yes, and also testified that the Miner equipment was fitted with side plates to keep the pin from falling out. He said the pin of the Durable gear became dislodged because the housing of the gear broke and said this could happen in service as well as in a test, although not to the same extent. He stated that the Rock Island tests were conducted and the data compiled in accordance with the A. R. A. practice at that time.

* * *



Atlantic Coast Line Photo

Atlantic Coast Line Train Northbound Near Callahan, Fla.

Proposal to Hold Up Unifications Opposed

WASHINGTON, D. C.

THE resolutions introduced by Senator Couzens to suspend the authority of the Interstate Commerce Commission to approve railway consolidations or unifications and also to declare unlawful any consolidation or unification without the approval of the commission was opposed by representatives of short line railroads and advocated by Daniel Willard, president of the Baltimore & Ohio, the Minnesota delegation in the House and other representatives of northwestern states at a hearing before the Senate Committee on interstate commerce on April 15 and 16. S. T. Bledsoe, general counsel of the Atchison, Topeka & Santa Fe, also urged an amendment to the resolution similar to the exemption clause in Section 7 of the Clayton act so that it would not prohibit the acquisition of stock of branch lines or short feeder lines where no substantial competition is involved. Mr. Bledsoe offered no general objection to the resolution although he expressed the opinion that the result would be disappointing, but he pointed out that as drawn it would prevent the practice the Santa Fe has followed for many years of carrying on the construction of extensions through subsidiary companies.

Senator Couzens indicated a willingness to consider such an amendment or even one exempting short lines generally from the effect of the resolution, but Bird M. Robinson, president of the American Short Line Railroad Association, and Ben B. Cain, vice-president and general counsel of the association, told the committee that that would not accomplish the object because if unification of the big lines is stopped they would not have the inducement to absorb short lines which is now afforded by the commission's power to impose conditions requiring applicants for approval of a unification to make provision for including short line connections. Mr. Cain told the committee that the passage of the resolution would have a serious effect on short lines.

Mr. Willard told the committee that while the passage of the resolution would put a stop to the carrying out of the Baltimore & Ohio's unification plans it would have no effect on the acquisitions already effected by its competitors through holding companies and he could not see that the terms of the resolution would have the effect of preventing similar activities in the future.

As is often the case at hearings before this committee the insistence of certain Senators on doing most of the talking made it somewhat difficult for the witnesses to present their arguments. Senators Wheeler, Dill and Brookhart kept interrupting to criticize the Interstate Commerce Commission for having abused its powers in its report on the Great Northern Pacific unification case and engaged in many wrangles with the witnesses and with Senator Hawes of Missouri, who asked why those who are dissatisfied with the commission's finding in that case should think it necessary to block all unifications in other sections of the country.

Senator Hawes said the resolution would "block a great development in the Southwest." He insisted that members of the Interstate Commerce Commission be called to testify before the hearings are closed but Chairman Couzens declined to put the motion until the committee has an executive session. Senators Fess, Goff, Wagner and Kean also indicated a lack of sympathy with the resolution.

Wilbur LaRoe, Jr., appeared as the first witness, on

behalf of the Arkansas Short Line, the Lackawanna & Wyoming Valley, and the Jamestown, Westfield & Northwestern. He said the resolution would "ruin the market for short lines" and would bring to a sudden halt the constructive work the commission has been doing for the past ten years in an effort to strengthen the transportation system of the country. He suggested an amendment so that the commission would not be precluded from authorizing acquisition of roads of limited mileage. Congress ought to be able to deal with the holding company situation, he said, without reversing the policy adopted in the transportation act, and he added that the resolution does not solve or attempt to solve the holding company problem. Asked why he made that statement Mr. LaRoe said that there are serious constitutional questions as to the power of Congress to deal with holding companies.

Senator Dill said the resolution would "prevent everything" and when Senator Hawes referred to it as leaving matters "open" for an indefinite period, Senator Couzens declared that the purpose was to "leave matters very much closed" until Congress could act further. Senator Hawes replied that there is no possible chance of passing the resolution through the Senate and the House.

Representative Knutson, of Minnesota, who has introduced a similar resolution in the House, read a statement in support of the resolution and in condemnation of the proposed unification of the Great Northern and Northern Pacific which he said represented the views of the Minnesota delegation in Congress and also of representatives of the northwestern states who had met in his office and appointed a committee to wait upon the Interstate Commerce Commission and call its attention to the proposed legislation. He said they felt it their duty to use their utmost efforts to prevent such a merger of parallel and competing lines and that Congress had never intended to authorize the commission to permit such a thing. He added that the law ought to be rewritten because the commission has too much power and when he criticized the commission for authorizing the abandonment of a line in Minnesota, Senator Hawes remarked that the same thing would happen in many places if the resolution should be passed. When Representative Knutson said he would not object to an exemption of short lines Mr. Robinson said such an exemption would be meaningless.

Mr. Bledsoe told the committee why the Santa Fe plan of organizing separate construction companies is necessary to enable it to finance extensions because otherwise they would come under the lien of its general and adjustment mortgage. Although he said he had not intended to discuss the general effect of the resolution he expressed the opinion that too long a delay would create a situation of uncertainty and he expressed the opinion that the effect of the action of holding companies is negative rather than positive, because while they may prevent a property from being acquired by some one else the commission has power to prevent actual unification. Senator Couzens interjected at this point that he knew of a number of cases where such acquisition of control has resulted in diversion of traffic and also of purchases, to the detriment of certain communities. "Yet it is contended," he said, "that Congress must sit idly by because ten years ago it enacted a policy which it knew nothing about." He said he had in mind that there would be no consolidation legislation until the House committee has completed its investigation of the holding company situation and desired to "stop this scrambling," but that he would have no objection to naming a definite period, such as a

year. Mr. Bledsoe suggested that a specific time limit might tend to speed up the legislation.

Mr. Cain's statement was made through a barrage of interruptions by Senator Wheeler, who insisted over and over that the commission in the Great Northern Pacific case was "flying in the face" of the Supreme Court decision in the Northern Securities case and had disregarded the law. After many efforts Mr. Cain succeeded in reading the provision in the transportation act which removes a unification approved by the commission from the operation of the anti-trust laws, and he pointed out that the commission has not yet entered an order in the case but is holding the record open and among other conditions has imposed a requirement that a feasible plan be submitted for the acquisition of short lines. He also outlined the findings made by the commission in various cases designed to require that short lines be included in unification plans and declared that the effect of the resolution to suspend all powers of the commission relating to unification would be "revolutionary." He furnished for the record a list by states of the 448 short lines, with a total mileage of 17,556, allocated to systems in the commission's consolidation plan, but Senator Wheeler jeered because it included only one 27-mile line in Montana.

C. J. Fagg, representing the New Jersey Traffic Advisory Committee, the New Jersey Industrial Traffic League and the Newark Traffic Club, expressed their opposition to the commission's 19-system plan and to mergers of large competing lines such as the Great Northern and Northern Pacific or the Erie and the Lackawanna, but said they were not opposed to acquisition of short lines.

Representatives of the railway brotherhoods also were on hand to testify in support of the resolution.

Mr. Cain, resuming his testimony on April 16 told the committee that he did not see the necessity of suspending the commission's authority if Congress desired to do something about the holding company situation but he pointed out that that problem had been before the commission since 1906. Senator Barkley asked if he thought the resolution broad enough to cover companies not under the jurisdiction of the commission and to prevent further acquisitions by such companies. He suggested that he had heard outside that the Allegheny Corporation and the Pennroad Corporation have already accomplished what they set out to do, while the resolution would tie the hands of other groups desiring to make further acquisitions. When Mr. Cain said it would stop the sale of over 400 short lines, Senator Couzens remarked that it "would stop the unloading on the public of a lot of bad investments." Mr. Cain also said he thought the fear of the employees as to their status was without foundation, because already 50,000 miles of line have been unified under the present law and he had heard of no employee displacement.

Mr. Willard said that he was not opposed to most of the declarations of purpose which accompanied the resolution, but he pointed out that the Baltimore & Ohio has not availed itself of holding companies to acquire stock in other roads and that the holding companies referred to have done what they have done without consulting the commission. Therefore, taking power from the commission would be of no value in such cases, whereas the effect of the resolution would be to create an indefinite period during which he did not see that they would be checked in any way, although probably some cases might go to court. Senator Couzens said that certainly the author of the resolution had intended to stop what the Pennroad and other companies have been doing, but Mr. Willard said he did not see how it would, although it would certainly affect those who

desire to proceed without holding companies. He said the Baltimore & Ohio originally had not been interested in consolidation until it saw other combinations built up around it and that he knew of very little opposition to the B. & O. system as outlined in the commission's plan. If the transportation act means anything, he said, it means that the other groups that have acquired control of railroads cannot consolidate without the approval of the Interstate Commerce Commission and he pointed out that it had no trouble in telling the B. & O. to sell the Western Maryland, although he did not know who it could sell it to if the resolution were passed.

Discussing the labor situation Mr. Willard said he was in thorough sympathy with the idea that the interests of the employees should be protected and thought that Congress might legislate somewhat along the line of the British law which provided that men who had been employed for five years should not be displaced or reduced in rank or compensation as a result of amalgamations. He pointed out that the resolution does nothing along this line but that if Congress does not legislate he would meet the situation on the B. & O. by merely ceasing to hire new men so that the employees need not be displaced in connection with economies effected as a result of unification. The B. & O. has 68,000 employees and each year 700 to 750 die, while about an equal number resign, so that in five years a policy of not hiring new men would provide for a readjustment affecting 7,500 men. He added that it takes a good deal of time to work out the economies such as would result from unification. He said that if it were found possible to remove a large number of men he would not feel that the company had any moral right to throw them out of employment. Labor is just as much interested as any one else in the proper carrying out of the consolidation scheme and the problem is not so serious as it appears, he said. The savings to result from unification are of two kinds, the reduced necessity for new capital resulting from the more intensive use of existing facilities, such as his company's proposal to use existing lines in constructing a shorter route between Chicago and New York, and those which reduce operating expenses. Almost the only way that economies can be effected in operation is by reducing the amount of labor used, because 60 per cent of a railroad's expenses are for labor and probably 50 per cent of the remaining 40 per cent spent for materials represents labor, so that if a railroad saves a dollar it is safe to say in general that 80 per cent is in wages. "We must recognize," Mr. Willard said, "that in accomplishing these economies they will be brought about largely by employing fewer men." He added that in the East the railroads have had no increase in freight business in recent years while passenger business has fallen off 30 to 40 per cent, but wages have gradually gone up and rates have just as gradually gone down, while the railroads have made a very satisfactory showing and the people have had better service.

When Mr. Willard said that one of the economies that could be realized if the B. & O. acquires the Reading would be in the use of the Reading shops instead of building new shops on the B. & O. he was asked if this would mean that employees would have to move to the Reading shops. He said that under the rule of restrictive seniority of the unions this could not be done but he thought the unions were giving some consideration to changing the rule.

Referring to the control of the Wabash by the Pennsylvania Mr. Willard said that the B. & O. had been told by shippers that they were being urged to route business over the new combination of lines but that "we expected that." Asked his opinion of transcontinental consolidations Mr. Willard said he was opposed to them.

Looking Backward

Fifty Years Ago

It has been announced that a new through passenger line between Philadelphia, Pa., and Chicago will be placed in operation on April 26, via the Philadelphia & Reading [now the Reading], the Lehigh Valley, the Erie and the Lake Shore & Michigan Southern [now part of the New York Central]. Through sleepers will make the run in about 36 hours.—*Railway Age*, April 22, 1880.

The Atchison, Topeka & Santa Fe, which has been pushed westward with such remarkable celerity, has reached Albuquerque, N. M., on the Rio Grande, 131 miles beyond Las Vegas, striking the river at Domingo, about 30 miles above. Albuquerque is to be the junction with the Atlantic & Pacific [now part of the Santa Fe] to California. Work is also being pushed on the Santa Fe line down the Rio Grande to El Paso, Tex.—*Railway Age*, April 22, 1880.

Several major railway construction projects have reported progress within the last week or two. Track on the Gulf, Colorado & Santa Fe is now laid to Brenham, Tex., 124 miles from Galveston, while the grading has been completed to Caldwell, 33 miles further. Beyond Brenham the road will reach a country as yet unoccupied by railroads, and that part of its line will be free from the competition it meets at almost every point between Brenham and Galveston. The International & Great Northern has awarded a contract for the extension of its line 100 miles southward from Austin, Tex. Track on the Texas & St. Louis [now the St. Louis Southwestern] is now laid to Pittsburg, Tex., 73 miles southwest of Texarkana, Tex. A contract has been let by the Columbus & Hocking Valley for the construction of the Ohio & West Virginia [both now parts of the Hocking Valley] from Logan, Ohio, to a point on the Ohio river at Pomeroy, 85 miles. This line is intended to furnish a route for ores brought from Missouri by the Ohio river to the blast furnaces in the Hocking Valley.—*Railroad Gazette*, April 16, 1880.

Twenty-Five Years Ago

H. A. Worcester, superintendent of the Western division of the Lake Shore & Michigan Southern [now part of the New York Central], has been appointed assistant general superintendent of the Michigan Central at Detroit, Mich. Alfred P. Thom has been appointed general counsel of the Southern at Washington, D. C., in charge of the law department of the Eastern and Western districts.—*Railway Age*, April 21, 1905.

The Senate committee on interstate commerce began its investigation of railway legislation on April 17. The attorney general has begun the preparation of an opinion on two of the constitutional questions involved in the inquiry: Whether Congress has power under the constitution to delegate to a commission any of its legislative power; and whether the constitution permits the regulation or reduction of railway rates to the point of confiscation.—*Railway Age*, April 21, 1905.

Ten Years Ago

L. R. Powell, Jr., assistant comptroller of the Seaboard Air Line, has been appointed comptroller.—*Railway Age*, April 16, 1920.

President Wilson on Tuesday sent to the Senate for its confirmation the appointments of the nine members of the Railroad Labor Board provided for in the Transportation Act.—*Railway Age*, April 16, 1920.

The labor troubles which originated in the walkout of the switchmen in the Chicago district, beginning April 1, spread to New York on April 9, and in a few days have resulted in an almost complete tie-up of freight service, a crippling of passenger service on some roads and a complete suspension of commuter service on others.—*Railway Age*, April 16, 1920.

Communications and Books

Railroad Museum Favored by Locomotive Historical Society

BROOKLINE, MASS.

TO THE EDITOR:

The editorial that appeared in your paper under date of March 29 on "Is There a Need for a Railroad Museum?" and the letter written by Mr. Keeney have been of deep interest to those of us who are connected with this Society and who have hoped that the time would come when the railroads themselves would have a museum.

Nearly ten years ago this Society started with the idea of preserving those documents and papers relating to the growth of transportation on which we could lay hands. This material, together with the pictures of locomotives, time tables, notices, etc., form a part of our collection and exhibition in the Baker Library (Harvard Business School, Boston, Mass.). As we have become known, many treasures have been added to our collection that otherwise would have been lost.

A museum, representing as many of the railroads as cared to participate, would, to my mind, fill an important gap. It would supplement our work as it would touch on a field for which, for the present at least, we have no space, but in which we could and would assist. The American Railway Association, supported by the roads themselves, could make a wonderful museum and I believe there would be plenty of material available.

I agree with you—the time to start it is now! During the past few years I have often heard officials express regret that a certain type of locomotive had not been preserved and placed on exhibition. Oftener, however, have I heard them express surprise that certain records were of value that were sold during the recent railroad administration for waste paper.

With the approaching anniversaries of the older roads an interest has been aroused in what has made history and I believe that if all will enter into the spirit of making a success of a railroad museum that indirectly the roads will benefit by it.

A visitor to "The Fair of the Iron Horse" could not help but be interested and have respect for the Baltimore & Ohio after witnessing such a spectacle. The fact that the event was visited by thousands attests the interest the public has in an event connected with the railroads. The public is still interested in our railroads and by all means let the railroads start this museum for the education and instruction of the public and the preservation of material that has made the history of transportation so vital to the public.

CHAS. E. FISHER,
President, Railway and Locomotive Historical Society, Inc.

New Books

Field Engineering, twentieth edition, revised and enlarged, by William H. Searles, C.E., and Howard Chapin Ives, C.E., civil and consulting engineer. Illustrated, 386 pages, 4½ pages, 5¾ in. by 8¾ in. Bound in Paper. Published by the Deutsche Reichbahn-Gesellschaft, Berlin.

The preface to the twentieth edition calls attention to the fact that the appearance of this edition marks the semi-centennial for this handbook of field engineering, which was for many years commonly designated as "Searles." This latest revision consists primarily in the addition of a chapter on Highway Curves, embodying an application of the practice of curve geometry to the requirements of short-radius curves.

Statistische Uebersicht Wichtiger Ergebnisse des Geschäftsjahres 1929 im Vergleich zu 1926, 1927 und 1928. 136 pages, 5¾ in. by 8¾ in. Bound in Paper. Published by the Deutsche Reichbahn-Gesellschaft, Berlin.

This little book gives an up-to-date view of the operations of the German State Railway Company. Its title, which,

translated, reads "Statistical Survey of Important Results of the Fiscal Year 1929 in Comparison with 1926, 1927 and 1928" well describes its contents. Although the text is in German, a very slight knowledge of that language and a dictionary is all that is needed for the understanding of the statistical tables. Furthermore, the comprehension of the non-German-speaking reader is still further assisted by a large number of charts which portray in graphic form the more important statistical results. The booklet is one which is bound to interest the student interested in the performance of the world's largest railway, which incidentally is also a decidedly progressive enterprise. The management is to be congratulated not only for producing such an attractive and informative volume but also for the promptness with which it appears after the close of the fiscal year.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Railroad Administration, by Ray Morris. Second Edition, Revised and Largely Rewritten by William E. Hooper. Chapters include "The Beginnings of a Railroad" especially procedure since passage of Transportation Act, "Organization for the Management of a Small Railroad," "Organization of a Large Railroad," "The Officers" (general statement of kind of work done by each officer), "Control Through Statistics," "British Railroad Organization," "Types of Government Railroad Organization," and "The Future of Railroads and Consolidations." Illustrations, charts, etc. 215 p. Pub. by D. Appleton & Co., New York City. \$3.50.

Railroad Consolidation—Its Economics and Controlling Principles, by Julius Grodinsky. Discusses general economic factors, interchange, control of traffic movements, long haul and short haul, connections and competitors, direct and indirect routes, closed and open routes, channels of trade and commerce, traffic and trackage agreements, consolidation in action, and legislative principles. 333 p. Pub. by D. Appleton & Co., New York City. \$3.50.

Railroad Consolidation—A List of References. "This list of references covers the subject of railway consolidation as it has developed since the post-war period." Indicates location of material in eleven libraries. Special series no. 52. 83 p. Pub. by Bureau of Railway Economics, Washington, D. C. Apply.

Periodical Articles

Aeronautics in Latin America, by Brower V. York. "There are more miles of air lines regularly operated, in Latin America than in the United States or in Europe." List of operating companies, p. 369-372. Maps, illustrations. Bulletin of the Pan American Union, April 1930, p. 355-372.

Argentine Fuel and Power and the International Coal Trade, by J. R. Bradley. "Its coal requirements for railways, industries, and bunkering depots....are but 75 per cent of what they were in 1913, notwithstanding the vastly increased use of energy." p. 119. "Railways Consume Two-Thirds of Coal Imported," "Coal-Storage Capacity of Railways" and "Locomotives Changed to Oil Fuel," p. 120. Commerce Reports, April 14, 1930, p. 119-122.

Reports On the Question of the Electrification of Secondary Lines. This question is subject 19 for discussion at the International Railway Congress in Madrid. Report No. 1 covering Europe, is by L. Sekutowicz. Report No. 2 covering all countries except Europe, is by D. Eugenio Rivera and José Maria Garcia-Lomas. Bulletin of the International Railway Congress Association, English Edition, February 1930, p. 491-534, 665-722.

Odds and Ends of Railroading

L. & N. Beauty

The National Bathing Beauty Contest held in Miami, Fla., this spring, was not without its railway representative. Ethel McFadden, who was "Miss Tennessee," is the daughter of Eugene McFadden, engine carpenter for the Louisville & Nashville at Paris, Tenn.

Baby Turk Named "Railroad"

New Turks no longer name children, as the old Turks inevitably did, for the wives and followers of the Prophet. The Anatolian city of Konia wins the prize for "modernization" with the recent bestowal upon a boy baby of the name "Railroad." He was born on a train.

Burning the Midnight Oil

E. L. Dryers, electrician, who maintains the train control equipment on the Columbus division of the Pennsylvania, is also a student at Ohio State University, and an accredited member of the junior class. Inspired by her husband's example, Mrs. Dryers has taken time out from her household duties, and is now a freshman at the same school.

Youngest Veteran

While we have been searching for the oldest veteran, the Buffalo, Rochester & Pittsburgh claims to have found the youngest veteran. He is J. A. Klos, 37 years old, with 21½ years in B. R. & P. service, who is now the head of the book-keeping department. It would be interesting to know if there are any veterans, younger than Mr. Klos, who have 20 or more years' service to their credit.

An Old Account Settled

A deposit of \$1,000 made by the old St. Louis, Iron Mountain & Southern with the City of St. Louis, Mo., in 1880, as assurance that it would replace paving in connection with a proposed track extension on Front street, St. Louis, will be repaid to the Missouri Pacific, which has since absorbed the Iron Mountain line. The extension was never built. The Board of Estimate and Apportionment on March 16 approved a bill for \$1,000 to reimburse the Missouri Pacific. No interest was included. At five per cent interest compounded, the deposit would now amount to about \$5,000.

Lincoln Expected To Be Fired, Lately-Found Letter Reveals

That Abraham Lincoln once expected to be "fired" by the Illinois Central is revealed in an interesting letter written by Lincoln on his 48th birthday, which was recently discovered in the possession of Mrs. Frank M. Foley, of Paris, Ill. The letter was written at Springfield, Ill., on February 12, 1857, and was addressed to Messrs. Steele & Summers.

"Your letter of the tenth covering a claim of D. A. Morrison against the Illinois Central is received," he wrote. "I have been in the regular retainer of the company for two or three years, but I expect they do not wish to retain me any longer . . . I am going to Chicago, if nothing prevents, on the 21st instant, and I will then ascertain whether they discharge me; and, if they do, as I expect, I will attend to your business and write you. If this is satisfactory, let it so stand—if not, write me at once."

Lincoln's fear of being discharged by the Illinois Central was apparently groundless, for he continued to represent the railway company until a short time before his election to the Presidency, in 1860. In 1859 Lincoln was host to a group of state officials on a tour of the Illinois Central for the purpose of appraising the property. The tour, which consumed several days, was made in a special train which passed over the entire

705 miles of road then constituting the Illinois Central. In January, 1860, Lincoln appeared before the Supreme Court of Illinois on behalf of the Illinois Central in an important tax case. The last case he ever handled involved the ownership of certain lake front lands at Chicago in which the Illinois Central was interested.

Lincoln's connection with this railroad is known to have been almost continuous from the summer of 1853 to the spring of 1860—a period of about seven years—during which time he handled numerous cases for the company. The largest fee Lincoln ever received for legal services was paid to him by the Illinois Central for winning a famous tax case.

Original Railroad Charters

BALTIMORE, MD.

TO THE EDITOR:

I observe on page 700 of *Railway Age* of March 22 the following statement in regard to the Pontchartrain railroad:

"**** Unlike any other railroad in the nation, the Pontchartrain railroad still operates under the name which it was given when its original charter was issued ****"

The description further indicates that the charter of the Pontchartrain railroad is dated January 20, 1830. Attention is called to the fact that the charter of the Baltimore & Ohio Railroad Company, embodied in an act of the Maryland Legislature dated February 28, 1827, considerably antedates that of the Pontchartrain railroad, and that the Baltimore & Ohio Railroad Company, after the lapse of 103 years, is still operating under its original name.

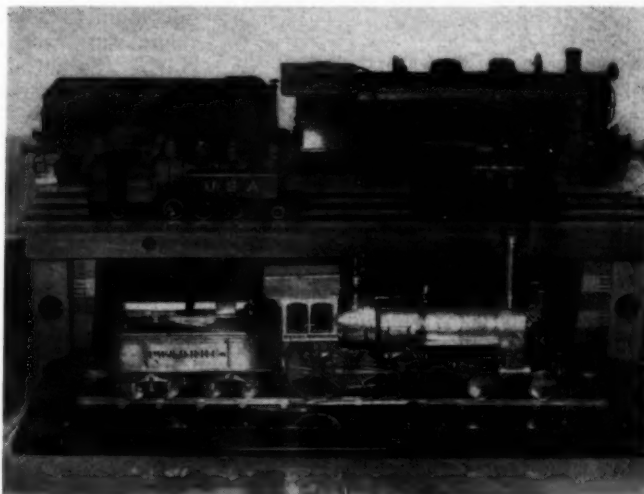
The foregoing can be verified from the records of this company and also from those of the Secretary of State of Maryland at Annapolis, Md.

P. G. LANG, JR.

Engineer of Bridges, Baltimore & Ohio.

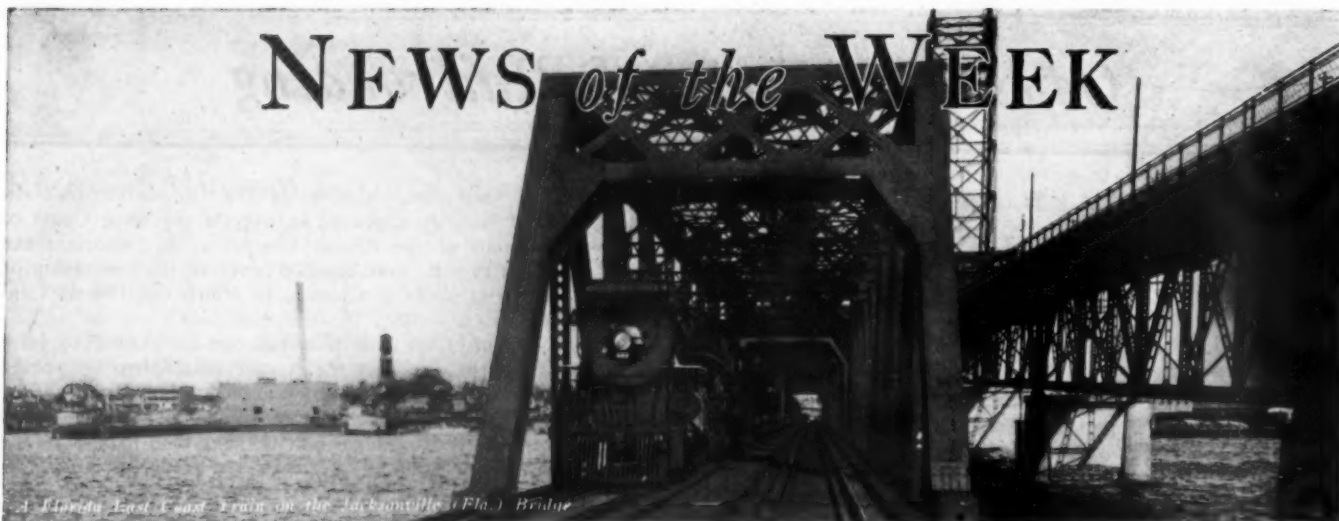
An Interesting Collection

Probating of the will of Samuel M. Felton, late chairman of the board of the Chicago Great Western, involves the disposal of the most unique collection of locomotive models ever gathered together. It is composed of silver and gold models, including one of the locomotive that took Abraham Lincoln to his first inauguration. This was given to Mr. Felton by his father, who was president of the Philadelphia, Wilmington & Baltimore (now a part of the Pennsylvania), over which the train ran. Also included in the collection are a number of miniature locomotives presented to Mr. Felton by the French government, as a recognition of his war-time service.



A Portion of the Felton Model Collection

NEWS of the WEEK



THE INTERSTATE COMMERCE COMMISSION has postponed until May 14 the effective date of its order in the private car case, now in court, in which it directed the railroads to cease carrying private cars for each other without the payment of tariff rates.

THE INTERSTATE COMMERCE COMMISSION's preliminary statement of the number of railway employees as of the middle of the month of February shows a total of 1,544,971, a reduction of 3.82 per cent as compared with February, 1929, and of 3.94 per cent as compared with February, 1928.

REPRESENTATIVE BOYLAN, of New York, has introduced in the House a joint resolution proposing the appointment of a joint committee of three Senators and three Representatives to confer with a committee of the New York legislature and recommended to Congress such action as may be necessary to bring about the transfer of the New York State Barge Canal to the federal government.

THE LEGISLATURE OF NEW JERSEY has authorized the Port of New York Authority to acquire the Little Basin of the old Morris Canal in Jersey City. The legislature also has passed a law which it is said commits the state to an extensive program of grade crossing elimination.

THE BOARD OF TRANSPORTATION of the City of New York, by a law which was approved by the Governor on April 8, (Chapter 373) now has authority to carry on the construction of tunnels and to conduct investigations relative to tunnels, railroads, ferries and all means of transportation.

THE EXECUTIVE COMMITTEE of the National Industrial Traffic League, at a recent meeting in Washington, went on record as opposed to the resolution introduced in the Senate by Senator Howell, of Nebraska, to amend section 15a of the interstate commerce act to provide for a "rate base" instead of a valuation of railway property. If hearings are held on the resolution representatives of the league will appear against it.

THE GREAT NORTHERN and the Northern Pacific are considering the purchase of the line of the Chicago, Burlington & Quincy between Aurora, Ill., and St. Paul, Minn., 393 miles, which with trackage rights between Aurora and Chicago, 38 miles, would provide those roads with an entrance into the latter city. This statement was made by Charles Donnelly, president of the Northern Pacific, at the annual meeting last week.

THE ST. LOUIS RAILWAY CLUB has elected the following officers for the ensuing year: President, W. Y. Brown, superintendent of car service of the Terminal Railroad Association; first vice-president, W. E. Hicks, assistant to the manager of the department of personnel of the Missouri-Kansas-Texas; second vice-president, J. W. Rea, general superintendent of the Missouri Pacific; third vice-president, M. F. Longwill, chief engineer of the Wabash, and secretary-treasurer, B. W. Frauenthal, general traffic agent of the St. Louis Public Service Company (re-elected).

Imported Personal Injury Cases

The Minnesota Supreme court has ruled that a court in Minnesota cannot refuse to try imported personal injury cases, even though the accidents occurred in other states and the persons bringing the suits are not residents of Minnesota. The ruling was made in a suit instituted by H. N. Boright, a resident of Kansas, through a Minneapolis law firm, against the Chicago, Rock Island & Pacific, in Steele county, which suit Judge Fred W. Senn had dismissed. Interested parties are considering asking the state supreme court to reopen the case and are studying the matter with a view to perfecting an appeal to the United States supreme court.

New Haven Deluxe Train Service

Incomplete information was given in the article "New Haven Deluxe Train Service Between New York and Boston" which appeared in the April 12, 1930, issue of the *Railway Age*, page 854. The statement was made on page 856 that only the dining cars of the Yankee Clipper train were equipped with American Steel

Foundry roller bearing units having Timken bearings. All of the 14 cars which compose the two seven-car trains have these roller bearing units. In addition to the equipment used on the Yankee Clipper, New Haven trains Nos. 23 and 24 are also equipped with these units.

Senate Increases I. C. C. Appropriation

The Senate on April 11 passed the independent offices appropriation bill, including the appropriations for the work of the Interstate Commerce Commission amounting to \$9,239,963. The bill as for the fiscal year ending June 30, 1931, passed by the Senate included an amendment of the House bill increasing the amount for valuation from \$2,540,000 to \$3,547,313, by restoring an increase recommended by the Bureau of the Budget which had been cut out of the House bill as the result of a misunderstanding because the House committee had heard that the commission was planning on a change in its valuation methods which might affect the amount of its needs.

B. & O. Scholarships for Boys and Girls

The Baltimore & Ohio, this year, as heretofore, intends to award a scholarship, worth \$100, to the farm boy or girl in Delaware who most efficiently completes activities in 4-H agricultural club work during 1930. The work referred to consists of activity in calf clubs, pig clubs, corn clubs, sewing clubs, and other farming enterprise, and the scholarship may be used at any recognized college or university in the country. The club work must be such as is recognized and supervised by the University of Delaware Agricultural Extension Service.

Names are given of three individuals who have won these scholarships in past years.

With the substitution of other names in place of Delaware, and Delaware institutions, the foregoing announcement has been issued also in Ohio, Indiana, Illinois, Pennsylvania, Maryland, Virginia and West Virginia. The total number of scholarships heretofore awarded in this extended territory is 104; and about one-half of the recipients of these scholarships are now enrolled as students in col-

leges in the several states, or have already graduated.

Baldwin Oil-Electric Switcher Tested

Baldwin oil-electric switching locomotive, No. 61000, recently tested on the Illinois Central, has been transferred to the Chicago, Rock Island & Pacific, where it will be operated in switching service at the La Salle Street station, Chicago, transfer service between Burr Oak, Ill., and Clearing station, and classification-yard service at Burr Oak. The locomotive, weighing 135 tons on two 4-wheel trucks, is powered with a 1,000-hp. Krupp Diesel engine, having six cylinders, 15 in. in diameter and with a 15-in. stroke. Electrical equipment for transmitting power to the truck wheels is furnished by the Westinghouse Electric & Manufacturing Co. The tests on the Rock Island will be comprehensive in character with a full complement of recording instruments, meters and observers to develop readings and information necessary for a complete report of the performance of the locomotive.

March Locomotive Shipments

March shipments of railroad locomotives from principal manufacturing plants, based on reports received by the Department of Commerce, totaled 68 locomotives, as compared with 67 in February and 35 in March, 1929. The following table gives the shipments and unfilled orders for March, 1930 and 1929. the 1929 totals and totals for the first three months of the two years:

Year and Month	RAILROAD LOCOMOTIVES Shipments			
	Domestic		Foreign	
	Total	Steam Electric	Steam Electric	
1930				
March	68	64	2	2
Total (3 months)	183	172	6	5
1929				
March	35	31	4	...
Total (3 months)	81	57	11	13
Total (year)	850	707	39	104
Unfilled orders, end of March				
	Domestic		Foreign	
	Total	Steam Electric	Steam Electric	
1930	1655	1491	140	24
1929	1105	971	65	69

Employees of New York Central Oversubscribe Stock Offering

President P. E. Crowley of the New York Central has announced that the Company's recent offering of 75,000 shares of its capital stock for subscription by officers and employees had been largely over-subscribed.

The offer provided that employees two years or longer continuously in the service of the New York Central Lines might subscribe at the price of \$130 per share for one share of stock for each \$400 of annual compensation to be paid for in monthly instalments of \$5 per share. Subscriptions were received from 32,000 employees for an aggregate of 118,000 shares.

In view of the over-subscription, all of

the subscriptions cannot be met in full. The 75,000 shares offered will be allotted to fill subscriptions for 1 and 2 shares and to give about 50 per cent of the number of shares asked for on all other subscriptions.

National Chamber to Discuss Waterways and Railways

At the annual meeting of the Chamber of Commerce of the United States to be held in Washington, D. C., April 28 to May 1, round-table discussions on waterways and railways have been scheduled. The waterways discussion will take place at the New Willard Hotel at 2 p.m. on April 29 and that on railways at the Carlton Hotel at 2 p.m. on April 30.

On the subject of waterways the following questions are to be considered:

POSSIBILITIES AND LIMITATIONS OF INLAND WATER TRANSPORTATION

- A—To what commodity movements is water transport particularly adapted?
- B—What standards and tests should be applied to determine whether a waterway should be improved?
- C—Why is the traffic on most improved waterways so low compared with their capacity?
- D—Should railroads be allowed to operate water carriers as they now operate or control highway and air carriers?

WATER TRANSPORTATION COSTS AND RATES

- A—Does the public interest warrant free use of waterways by common and private carriers?
- B—Is some form of "user" tax, comparable to that paid by all highway users, desirable and feasible?
- C—On what principles should rail and water rates be established?

THE GOVERNMENT BARGE LINE

- A—Is it accomplishing anything that could not be accomplished by privately owned common carriers?
- B—Is the law discouraging private capital from engaging in water transport?

The railway group will consider the following:

CO-ORDINATION OF RAIL, HIGHWAY, WATERWAY AND AIR TRANSPORTATION

- A—How will increased railroad use of motor transport aid business?
- B—Can rail and inland waterway transportation be better co-ordinated?
- C—What possibilities does rail-air transportation offer to business?

RAILROAD CONSOLIDATION

- A—How will railroad consolidation benefit business?
- B—Is progress being made toward proper consolidation? Is further legislation needed?

EXPEDITIOUS SETTLEMENT OF RATE CONTROVERSIES

- A—What changes, if any, in the powers and duties of the Interstate Commerce Com-

mission will facilitate formal settlement of cases? Informal settlement?
B—How can business organizations aid in reduction of rate litigation?

At the general session on the subject of taxation to be held at the U. S. Chamber of Commerce Building one of the principal speakers will be Fred W. Sargent, president of the Chicago & North Western.

Air transportation will be dealt with at a luncheon session at the Hotel Willard at 12:30 p.m. May 1.

National Safety Contest

The National Safety Council plaques awarded to the railroad having the best safety record in 1929 will be presented at a dinner to be given in Chicago on May 19. The contest, which was begun in 1926, culminates in the awarding of plaques once a year for the best record for safety of employees of Class I railroads on the basis of casualties to employees on duty per million man hours (excluding employees in marine departments). For the purposes of the contest, the Class I railroads are divided into seven groups in accordance with their respective man-hour exposure, as follows (billions of man-hours):

Group A. 100 or more; Group B. 50-100; Group C. 20-50; Group D. 10-20; Group E. 5-10; Group F. 2-5; Group G. less than 2.

No railroad is eligible to win a group award more than twice in succession; for this reason the Union Pacific could not compete in 1928.

In 1928 the Southern received the award for Group A. with a casualty rate of eight per million man-hours, the Texas & New Orleans that for Group B. with a rate of 8.91, the Oregon-Washington Railroad & Navigation Company Group C. with a rate of 4.63, the Chicago Great Western that for Group D. with a rate of 3.30, the Gulf, Mobile & Northern that for Group E. with a rate of 3.15 and the Ann Arbor that for Group F. with a rate of 2.81. Preliminary figures for 1929, based on the compilation of the quarterly figures, are of interest, although they cannot be considered as final. The preliminary statistics are as given in the accompanying table.

EMPLOYEE CASUALTIES, 1929; PRELIMINARY FIGURES

Rank	Railroad	Killed	Injured	Total Casualties	Man-Hours (000)	Casualties Per Million Man-Hours
Group A						
1	Union Pacific System	26	294	320	129,165	2.48
2	Central Region, Pennsylvania.....	46	946	992	128,443	7.72
3	Southern System	37	1,150	1,187	148,758	7.98
Group B						
1	Union Pacific Company	13	128	141	70,261	2.01
2	Atlantic Coast Line	10	419	429	58,122	7.38
3	Cleveland, Cincinnati, Chicago & St. Louis	19	468	487	55,763	8.73
Group C						
1	Oregon-Washington Railroad & Navigation	5	49	54	20,372	2.65
2	Oregon Short Line	6	54	60	22,126	2.71
3	Wabash System	19	356	375	49,382	7.59
Group D						
1	Los Angeles & Salt Lake.....	2	63	65	16,406	3.96
2	Chicago Great Western.....	4	75	79	18,903	4.18
3	Kansas City Southern.....	3	66	69	13,335	5.17
Group E						
1	Gulf, Mobile & Northern.....	2	8	10	5,952	1.68
2	Duluth, Missabe & Northern.....	3	18	21	5,897	3.56
3	Bessemer & Lake Erie.....	0	89	89	8,903	10.00
Group F						
1	Duluth & Iron Range.....	1	10	11	3,963	2.78
2	Staten Island Rapid Transit.....	0	12	12	3,683	3.26
3	Ann Arbor	4	21	25	4,445	5.62

Start Made on Clearing Up C. N. R. Finances

Preparatory to introducing legislation later in the session of the Canadian Parliament at Ottawa Hon. T. A. Crerar, Minister of Railways and Canals, is now taking steps to clean up some smaller financial situations in connection with the Canadian National so that the way will be cleared for the reorganization of its tangled financial structure. Last week the Minister of Railways gave notice of two measures to be introduced after the Easter holiday, one regarding the final acquisition by the Canadian National of the Central Vermont road, and the other is for the refunding of maturities of the Minnesota & Manitoba road, a product of Mackenzie and Mann days.

The Central Vermont notice is as follows: "That it is expedient to bring in a measure respecting the Canadian National Railway Company to provide for the issue of new securities by the company, guaranteed by the Dominion, not exceeding \$8,609,000, the aggregate face value of the original securities, to repay temporary loans negotiated by the company as successors by amalgamation to the Grand Trunk Railway Company of Canada for the purpose of retiring the five per cent ten-year refunding mortgage gold bonds of the Central Vermont Railway Company, dated May 1st, 1920, amounting to \$8,609,000."

The Western road's situation is shown in the following notice: "That it is expedient to bring in a measure respecting the Canadian National Railway Company, to provide for the refunding of certain notes or obligations of the Canadian Northern Railway Company and the Minnesota and Manitoba Railroad Company, and for the issue of substituted securities therefor guaranteed by the Dominion not exceeding \$20,042,038.84, the aggregate face value of the original securities."

Another bill to be introduced after Easter by Mr. Crerar will provide for an additional \$3,650,000 to the Canadian National Railways to meet unforeseen expenses in connection with the viaduct and terminal works in Toronto.

Safety Program for May

The Committee on Education, of the Safety Section of the American Railway Association, E. R. Cott, chairman, proposes that during the month of May the prevention of accidents at highway crossings shall be given special study and attention. While the responsibility for such accidents rests mainly with the driver on the highway, all railroad employees and officers should take care to see that no possible blame can attach to the railway. Every employee in the vicinity of a crossing who finds it possible to warn a traveler on the highway of danger, should give such warning. Trainmen must be careful not to leave cars where they will obstruct the view of a traveler, and must exercise constant care when pushing cars over crossings or separating or recoupling trains. The circular contains admonitions also to officers, engineers and firemen.

A railroad employee has in this matter a duty to the railroad as well as to the public, for an automobile on the track may derail a train, causing loss of life.

N. Y. C. Attitude on New England Outlined by P. E. Crowley

The position of the New York Central with reference to consolidation proposals for New England railways was outlined in a recent statement of P. E. Crowley, president of the New York Central lines, before the New England Railroad Committee. Mr. Crowley's remarks were confined mainly to a discussion of New York Central relations with the Boston & Albany and the Rutland, although he did refer briefly to its present interchange arrangements with the Boston & Maine and the New York, New Haven & Hartford.

The statement opens with an historical survey of the beginnings of the Boston & Albany and events leading to its lease to the New York Central. Mr. Crowley then continued to outline improvements in facilities and services which have been installed on the Boston & Albany under New York Central direction, and held in this regard that "It has been shown that the Boston & Albany's affiliation with the New York Central has been of long duration and has been of substantial benefit to the New England territory served. It is evident that the requirements of the Transportation Act relating to the preservation of the existing channels of trade and commerce and to the affording of an adequate transportation system can best be accomplished by continuing the affiliation with the New York Central. . . . So far as we are aware there has been no public objection voiced all through the consolidation proceedings to the retention of the Boston & Albany by the New York Central. My opinion is that the Boston & Albany should remain with the New York Central as heretofore proposed by the Storrow Committee and in conformity with the plan of the Interstate Commerce Commission."

Regarding the Rutland Mr. Crowley endorsed a previous statement made by F. L. R. French, vice-president and general manager of the Rutland, stating that he agreed with Mr. French, that it would be detrimental to the territory served by the Rutland if it were to be dismembered in the manner suggested by the Commission.

In connection with the disposition of other New England roads, Mr. Crowley

called attention to the traffic affiliations of the New York Central with these lines. "One of the most important interchanges of the New York Central is with the Boston & Maine at Rotterdam," he said. "This interchange amounts to about one-third of the total interchange of the Boston & Maine with connections outside of New England. It would, of course, be detrimental to the New York Central and I think I may say it would be detrimental to the interests of New England if, as a result of any disposition of the Boston & Maine, this interchange should be dried up or materially lessened."

"The New York Central-Boston and Albany interchange with the New Haven," he continued "is very important. It represents from 17 to 25 per cent of the total interchange of the New Haven. . . . A material lessening of this interchange would, I think, be detrimental to the interests of New England as well as to the interests of the Boston & Albany and New York Central."

Delegates to International Rail Congress Appointed

At the Eleventh International Railway Congress, which is to be held at Madrid, Spain, from May 5 to 15 inclusive, the United States will be represented by a committee of 10 industrial delegates headed by Colonel Edward A. Simmons, president of the Simmons-Boardman Publishing Corporation, while 9 North American railroads will send 20 representatives.

The industrial delegates, most of whom are connected with railway supply companies, appointed by the government of the United States are:

CHAIRMAN, Simmons, Colonel Edward A., president, Simmons-Boardman Publishing Corp., New York.

Carr, George R., chairman, Locomotive Firebox Company, Chicago.

Merz, A. S., vice-president, Standard Railway Equipment Co., New York.

Muchnic, Charles H., consulting engineer, New York.

Plogstead, Walter J., General Railway Signal Co., New York.

Poor, Fred A., president, The P & M Company, Chicago.

Robinson, Bird M., president, The American Short Line Railroad Assn., Washington, D. C.

Schleiter, Walter F., president, Verona Tool Works, Pittsburgh, Pa.

Smith, Harold A., president, Transportation Publishing Co., Inc., Los Angeles, Cal.

Strong, James B., president, Ramapo Ajax Corporation, New York.

While it is possible that additional railroad delegates will be appointed within the next week or two, those railroad officers who have already signified their intention of attending the Congress from the United States and Canada are as follows:

Road	Representative	Position
Baltimore & Ohio.....	Voorhees, H. B.....	Vice-Pres.
Canadian National	Gage, R. G.....	Ch. Elec. Engr.
	Hills, A. J.....	Asst. to Vice-Pres.
Delaware & Hudson.....	Burch, H. F.....	Asst. Gen. Mgr.
Erie	von Schrenk, Dr. Herman.....	Consulting Timber Eng.
Illinois Central	Chisholm, W. H.....	European Traffic Mgr.
New York Central.....	Wishart, W. C.....	Vice-Pres. (Lines)
	Lentz, W. L.....	Eng. Motive Power (Lines)
	Neubert, J. V.....	Ch. Eng. Mt. of Way (R. R.)
	MacBain, D. R.....	Gen. Mgr. Line West (R. R.)
Pennsylvania	Clement, M. W.....	Vice-Pres.
	Le Boutillier, G.....	Vice-Pres.
	Hankins, F. W.....	Ch. Motive Power
	Ball, A. J.....	Foreign Frt. Traffic Mgr.
	Allen, Porter.....	Ch. Engr. Mt. of Way
	Wiggins, W. D.....	Ch. Engr., Central Region
Quebec Central	Coleman, D. C.....	Vice-Pres.
	Brown, Sir George McLaren.....	European gen. mgr.
Reading	Ewing, Chas. H.....	Vice-Pres.
	Hare, J. V.....	Secy.

Traffic

The Ohio Valley Shippers' Advisory Board will hold its next meeting at Hotel Gibson, Cincinnati, Ohio, on April 23 (the day before the annual meeting of the Associated Traffic Clubs of America in the same city). The Shippers' Board will be addressed by Dr. Spurgeon Bell of Ohio State University and by H. G. Taylor and W. J. McGarry of the American Railway Association.

Chicago-California Schedules Shortened

At a joint meeting of the operating and traffic officers of the Atchison, Topeka & Santa Fe, the Chicago & North Western, the Chicago, Rock Island & Pacific, the Union Pacific and the Southern Pacific in Chicago on April 11, it was concluded that, beginning June 1, the running time of extra fare trains from Chicago to California shall be reduced 1 hr. 30 min. and eastbound 50 min. In addition, it was decided that the running time of westbound limited all-Pullman trains be reduced 1 hr. This reduction places the extra fare trains on a schedule of 56½ hrs. westbound and 57 hrs. 10 min. eastbound without an increase in the extra fare charge.

"Claim Prevention" by the Consignee

"Load this order in a car so as to insure lading being intact upon arrival of car at destination under reasonable carrier handling. Claim for damaged lading due to improper loading by shipper will be referred to consignor for adjustment without recourse by us on carrier."

"Future orders will depend upon the proper packing and loading of this order."

The foregoing, an extract from an order for goods recently made by a wholesale merchant, appears in a circular issued by a southern carrier as a suggestion to other buyers.

The author of the paragraph evidently has discovered the absurdity of always assuming unreasonable carrier handling.

B. & O. Withdraws Reduced Coach Fares, P. R. R. Its Rail-Highway Service

The Baltimore & Ohio has been authorized by the Interstate Commerce Commission to cancel on five days' notice the tariffs which it had filed to become effective on April 20 establishing special reduced coach fares on designated trains between New York, Philadelphia, Baltimore, Washington and Pittsburgh. The Pennsylvania filed a protest asking the commission to suspend the tariffs, stating that the fares proposed were the equivalent of the highway motor coach fares between the points named and that to attempt to meet highway motor coach fares with rail service at the same rates would tend to destroy the railroad passenger fare structure.

The Pennsylvania on April 13 discon-

tinued the sale of joint railway and highway tickets, which provided for railway transportation in Pullman cars at night and motor coaches by day between Eastern seaboard points and its western termini.

Hearing on Newsprint Rates

Practically every important paper mill in Canada was represented by counsel before the Dominion Railway Board at Ottawa last week to seek annulment of a new tariff of freight rates for newsprint paper in carload lots consigned to points in the United States.

The hearing was adjourned until May 12 because of the inability of several counsel to be present.

The hearing has to do with freight bill totaling several millions of dollars annually. On August 1, 1929, the Canadian railways made effective new freight rates which meant an increase of about 25 per cent. These rates were suspended by the Railway Commission of Canada and the Interstate Commerce Commission.

The present hearing was to determine whether the increased rates should be annulled or upheld.

Agriculture on the New York Central

A poultry-management demonstration train operated by the New York Central Lines in the month of March, in co-operation with Ohio State University, was visited by over 13,000 farmers of Ohio and West Virginia.

On this expedition which, within two weeks, covered all New York Central and Big Four lines in the state of Ohio, over 1500 poultry farmers were enrolled in a project under which a year's record will be kept of scientific management with periodical reports.

The Michigan Central last year educated the farmers of Barry County, Michigan, where the use of scientific fertilizers had been neglected, and as a result of a six-day program, throughout the county, the farmers in 1929 bought 73 cars of limestone, as compared with 26 cars shipped into this county in 1928.

Freight Traffic in February

The volume of freight traffic handled by the Class I railroads in February amounted to 34,340,775,000 net ton-miles, according to reports compiled by the Bureau of Railway Economics. Compared with February 1929, this was a reduction of 3,798,996,000 net ton-miles, or 10 per cent, and it was also a reduction of 3.9 per cent under that of February, 1928.

In the Eastern district there was a reduction of 9.6 per cent; in the Southern district 10.6 per cent, and in the Western 10.3 per cent.

The freight traffic handled in the first two months of 1930 amounted to 71,062,160,000 net ton-miles, a reduction of 6,287,247,000 net ton-miles or 8.1 per cent under that of the corresponding period in 1929 and a reduction of 1.3 per cent under that of the corresponding period in 1928.

The average speed of freight trains

in February was 13.5 miles an hour, an increase of 0.1 mile above the best previous record of 13.4 miles, which was attained in a number of months in 1929. It also was an increase of 0.7 mile above the average for February last year.

The average load per car in February this year was 27 tons, a decrease of 0.3 ton below the average for February, 1929, but an increase of 0.4 ton above February, 1928.

New York Suburban Traffic

The Suburban Transit Engineering Board (Port of New York Authority) which has been studying passenger traffic in and around New York City, has issued a preliminary memorandum in which it is stated that suburban passengers coming into Manhattan at the present time number nearly 23,000 more each day than on the corresponding days two years ago.

The total daily number from points in New Jersey is given as 318,100; from Long Island 167,000 and from Westchester County 95,400. The largest number of passengers brought in during a single hour at one station is given as 29,000, at Grand Central Terminal. Passengers of the Long Island Railroad, arriving at Pennsylvania station number 28,300; at Hudson Terminal of the Hudson & Manhattan, 28,100; Jersey City terminal of the Erie, 26,700. Increases in the total traffic, for the year 1927, as compared with 1914, counting both inbound and outbound, are given as follows: Grand Central Terminal from 22,500,000 to 48,000,000; and of this the New York Central is credited with 28,000,000 in 1927 or an average annual increase of 1,200,000 passengers. The increase on the New York, New Haven & Hartford was from 10,000,000 to more than 17,000,000 or an average annual increase of 500,000.

The Long Island passenger movement to and from Pennsylvania station has increased in 13 years over 300 per cent, or from 11,000,000 to 47,500,000. The New Jersey traffic shows in 1914 a total of 123,000,000; in 1927 a total of 208,500,000, increase of 70 per cent.

Of the commuters arriving at the Grand Central Terminal, 42 per cent walk to their destinations after leaving the trains; that is to say, 58 per cent make use in the city of the elevated, subways or surface street cars. Of the 500,000 daily suburban passengers coming to New York from Long Island, Westchester and New Jersey, about 106,000 are destined to the half square mile area below Vesey street.

Of Long Island commuters using the Pennsylvania station at Seventh avenue and Thirty-third street, 70 per cent use city transit facilities to complete their trip.

The Engineering Board calculates that from one-fourth to one-half of the entire inbound business of a day has to be dealt with in the peak hour in the morning. This hour varies at different stations; at the Grand Central, 51 per cent of the entire day's inbound total arrives between 8:10 a.m. and 9:09 a.m. The heaviest hour with Long Island passengers at the Pennsylvania station is between 7:50 a.m. and 8:49 a.m., in which hour 40 per cent of the day's total leaves the trains.

Equipment and Supplies

Locomotives

THE CUMBERLAND & PENNSYLVANIA is inquiring for one 2-8-0 type locomotive.

THE NEW YORK, NEW HAVEN & HARTFORD is inquiring for ten electric locomotives.

Freight Cars

THE ERIE is inquiring for 150 convertible ballast cars of 70 tons' capacity.

THE ALUMINUM COMPANY OF AMERICA is inquiring for 20 special hopper cars.

THE WARRIOR RIVER TERMINAL, New Orleans, La., is inquiring for 65 mill-type gondola cars of 70 tons' capacity.

THE WHEELING STEEL CORPORATION, Wheeling, W. Va., is inquiring for 12 all-steel flat cars.

THE LOUISIANA & ARKANSAS has ordered 300 box cars and 200 automobile cars from the General American Car Company.

THE UNION PACIFIC contemplates building 300 flat cars of 50 tons' capacity in its own shops and is now inquiring for the steel underframes for these cars.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered 15 coke cars of 40 tons' capacity from the Standard Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of March 8.

Passenger Cars

THE MISSOURI-KANSAS-TEXAS is inquiring for three dining cars.

THE ILLINOIS CENTRAL is now inquiring for 10 electric suburban cars and 10 trailers.

Iron and Steel

THE SOUTHERN has received bids on 180 tons of steel for a bridge at Charlotte, N. C.

THE ERIE has ordered 110 tons of steel for a bridge at Conesus, N. Y., from the McClintic-Marshall Company.

THE LEHIGH VALLEY is inquiring for about 1,000 tons of steel for seven bridges in Jersey City and Bayonne, N. J.

THE BOSTON & MAINE is inquiring for 150 tons of steel for a bridge at Rochester, N. H.

THE CHESAPEAKE & OHIO has placed an order for 115 tons of steel for a bridge at Cabell, W. Va.

THE NEW YORK CENTRAL has received bids on 100 tons of steel for a bridge at Stryker, Ohio.

THE CINCINNATI, NEW ORLEANS & TEXAS PACIFIC has received bids on 700 tons of steel for a bridge at Burnside, Ky.

THE BALTIMORE & OHIO is inquiring for 250 tons of steel for signal bridges and has given an order for 150 tons for a bridge at Gulfport, Staten Island, N. Y., to the American Bridge Company.

Machinery and Tools

THE ILLINOIS CENTRAL has ordered one gasoline-driven maintenance of way crane from the Orton Crane and Shovel Company.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered two 7-ton maintenance of way cranes from the Orton Crane & Shovel Company.

Signaling

THE NEW YORK CENTRAL has ordered from the General Railway Signal Company two sets of cab signals to be used at Gardenville (N. Y.) yard.

THE SOUTHERN PACIFIC has ordered from the General Railway Signal Company an electric interlocking machine to be installed at Martinez, Cal., 72 levers. The order includes 18 switch machines.

THE TEXAS & PACIFIC has ordered from the General Railway Signal Company materials for automatic block signals between Fort Worth, Tex., and Whitesboro, 72 miles. Color-light signals, type SA, will be used.

THE DENVER & RIO GRANDE WESTERN has ordered from the General Railway Signal Company materials for the installation of automatic block signals between Soldier Summit, Utah, and Provo, 50 miles. Color-light signals, type D, will be used.

THE TOLEDO TERMINAL has ordered from the General Railway Signal Company material for improvement of the interlocking facilities at Lower Maumee River Bridge, Toledo, Ohio. The apparatus is like that used in the G. R. S. centralized control system, and one lever will control the existing switch machines which operate the rail locks and circuit controllers.

In its present state the waterway movement represents chiefly the desire of local shippers to get transportation at less than cost. In actuating motive it differs not at all from any other demand for public ownership.

—From the Wall Street Journal

Supply Trade

C. E. Graham has moved his office from 51 East Forty-second street to 370 Lexington avenue, New York City.

The R. H. Bogle Company, on April 15 moved its general office from the Harrison building, Philadelphia, Pa., to its plant at Alexandria, Va.

The Ramapo Foundry & Wheel Works will, on April 25, move its New York City office from 29 Broadway to 9 Park Place.

The Texas Company has moved its offices from 17 Battery Place to 135 East Forty-second street, New York City.

The Chicago Car Seal Company has purchased a one-story factory building at Erie street and Western avenue, Chicago, which it will occupy after May 1.

The Railroad Accessories Corporation has moved its office from 415 Lexington avenue to the Chrysler building, Forty-second street and Lexington avenue, New York City.

The Naylor Pipe Company, Chicago, has moved its New York City office from 25 Church street to 3116 Chrysler building, Lexington avenue and Forty-second street.

The Corbin Supply Company, Macon, Ga., has been appointed representative for the complete line of chain and transmission equipment of the Chain Belt Company, Milwaukee, Wis.

Daniel B. McCarthy, sales agent of the American Car & Foundry Company, with headquarters at St. Louis, has resigned to become vice-president of the Quaker City Tank Line, Inc., with the same headquarters.

Edward C. Kenyon has been appointed a representative of the Ashton Valve Company, Boston, Mass. Mr. Kenyon has been assigned to duties in the railroad department with headquarters at the Chicago office.

The Hennessy Lubricator Company, 136 Liberty street, New York, is the new name under which the business formerly conducted by J. J. Hennessy is being carried on. The company has opened an office at 20 East Jackson boulevard, Chicago.

T. F. Clifford, sales agent of the Globe Steel Tubes Company, has resigned, effective June 1, to become Chicago representative of the Northwestern Barb Wire Company, Sterling, Ill., and the Chandler Products Corporation of Cleveland, Ohio, with headquarters at 516 Wrigley building, Chicago.

The Electric Railweld Sales Corporation, Chicago, has extended its service to include the reclamation of frogs,

switches and crossings, in or out of track, for which it has created a new division in charge of **C. O. Hunt**, formerly shop superintendent of the Ramapo Ajax Corporation at Chicago.

J. A. Leiendecker, pole line material specialist with the General Electric Supply Corporation, has resigned to go with the **National Lumber & Creosoting Company** and will specialize in pole sales as well as other creosoted timber products in northern Texas and Oklahoma. Mr. Leiendecker's headquarters are at Dallas, Texas.

Obituary

Clarence H. Norwood, president of the Norwood-Noonan Company, designers of electrical draw bridge machinery, Chicago, died in that city on April 12 following a heart attack. He was born in San Francisco, Cal., in 1875, and until 1919 was associated with the sales department of the Union Iron Works, the Cutler-Hammer Manufacturing Company and the Commercial Electric Company. In 1919 he organized the Norwood-Noonan Company of which he was president at the time of his death.

Morris B. Brewster, president and general manager of Morris B. Brewster, Inc., Chicago, distributor of metallic packing, died in that city on April 14. He was born in Cincinnati, Ohio, on June 25, 1874, and entered railway service in 1891 as a messenger boy in the telegraph office of the Pennsylvania at Cincinnati. Later he became a machinist apprentice and in 1897 was transferred to the Columbia, Ohio, shops as a draftsman. In 1901 he left the employ of the Pennsylvania to enter the sales department of the Hayden Manufacturing Company, and a few months later was appointed sales representative of the Ewald Iron Company at Louisville, Ky. He resigned from this position in 1903 to become sales manager of the United States Metallic Packing Company at Philadelphia, Pa., and in 1921 organized Morris B. Brewster, Inc., of which he was president at the time of his death.

Trade Publications

ROCK-DRILL STEEL—The Sullivan Machinery Company, Chicago, has published a 48-page handbook, designated as circular No. 72-K, which contains information on the selection, heating, forging and tempering of rock-drill steel. It also includes instructions for the care and use of Sullivan drill sharpeners and drill-steel furnaces.

GOLDEN GLOW FLOODLIGHTING PROJECTORS is the title of Bulletin No. 260 issued by the Electric Service Supplies Company, Philadelphia, Pa. The bulletin which contains 64 pages, shows many illustrations of floodlighting installations both utilitarian and decorative. A portion of the book is devoted to information regarding the selection of lighting equipment. Lantern floodlights are also shown in a variety of types.

Construction

BALTIMORE & OHIO—The Vang Construction Company, Cumberland, Md., has a contract for the construction of a subway under this company's tracks at Hazelwood, Pa., at an approximate cost of \$250,000.

CANADIAN NATIONAL—This company plans to spend approximately \$25,000,000 during 1930 on new construction, maintenance and general betterment work in western Canada. This figure includes appropriations of \$9,000,000 for the construction of new branch lines in Alberta, Saskatchewan and British Columbia, as reported in the *Railway Age* of March 1, but is exclusive of sums to be spent on the Hudson Bay Railway and the Canadian National's share of expenditures for the Northern Alberta. Approximately \$16,000,000 will be spent on western lines now in operation for relaying of heavier rail on nearly 400 miles of track, ballasting, track extensions, bridging, fencing, erection of new buildings and provision of improved water supply facilities; on improvements and rearrangement of yards at a number of points, particularly at Saskatoon, Sask., where extensive terminal changes begun last year will be continued, and on hotels now under construction at Vancouver, B. C., and Saskatoon. Additional work on the Hudson Bay Railway includes the construction of station buildings and employees' dwellings.

CHESAPEAKE & OHIO—The Interstate Commerce Commission has authorized this company to construct an extension from a point on its Cabin Creek branch near Edwight, W. Va., southeasterly to a connection with its Piney Creek branch at Surveyor, 19.2 miles; estimated cost \$2,377,470.

CHICAGO & NORTH WESTERN—This company has let contracts totaling \$250,000 to the Koss Construction Company, Des Moines, Iowa; the Jutton-Kelly Company, Milwaukee, Wis.; the Widell Company, Mankato, Minn.; the S. G. Cool Construction Company, Chicago, and Peppard & Burrill, Minneapolis, Minn., for the construction of concrete substructures at various points on its lines as part of its 1930 bridge replacement program. A contract has been awarded to the Edward E. Gillen Company, Milwaukee, Wis., for driving foundation piles preparatory to the construction of an addition to the Kinnickinnic grain elevator, operated by the Donahue-Stratton Company at Milwaukee. The addition will consist of 48 bins, with a capacity of 2,000,000 bu. and will be constructed at a total cost of about \$500,000. A contract for the construction of a two-story brick office building with dimensions of 42 ft. by 112 ft., for the use of employees and customers of the potato yard at Wood street, Chicago, has been awarded to H. A. Peters & Co., Chicago, at a cost of \$35,000.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC—Bids were closed on April 17

for the construction of Sections 6 and 7, between Moseby, Mo., and Birmingham, about 13 miles, of the joint line being constructed by this company and the Chicago, Rock Island & Pacific between Polo, Mo., and Birmingham, as a part of a new entrance into Kansas City, Mo., from the north.

CHICAGO, ROCK ISLAND & PACIFIC-WABASH—The St. Louis (Mo.) Board of Public Service has awarded a contract to A. P. Nolan, St. Louis, at a cost of \$48,000, for the grading incident to the depression of the tracks of these two companies at Lindell and Union boulevards and through Forest Park, preparatory to the construction of a reinforced concrete viaduct to carry the boulevards over the tracks. A contract has been let to the Myers Construction Company, St. Louis, for the installation of a drainage system at a cost of \$23,000. The entire cost of the project, to be borne by the railroads and the city, will approximate \$500,000.

GREAT NORTHERN-WESTERN PACIFIC—Oral arguments were heard by the full membership of the Interstate Commerce Commission on April 16 on the applications filed by these companies for authority for the Great Northern to build a line from Klamath Falls, Ore., south to Bieber, Cal., 90 miles, and for the Western Pacific to build a line from Keddie to Bieber, about 110 miles, forming a connection which would give the Great Northern access to California in competition with the Southern Pacific.

LONG ISLAND—The Public Service Commission of New York has approved an estimate of cost totaling \$208,579, exclusive of land and damages, for the elimination of the Carleton avenue crossing in Islip, N. Y., and a similar estimate of \$58,675 for the reconstruction of the existing bridge carrying Franklin street, Mineola, N. Y., over the Long Island tracks.

NEW YORK CENTRAL—This company is receiving bids for interior alterations and elevator changes in its mail service building at 466 Lexington avenue, New York.

NEW YORK CENTRAL-PENNSYLVANIA-NEW YORK, CHICAGO & ST. LOUIS—The Public Service Commission of New York has approved an estimate of cost totaling \$295,000, exclusive of land and damages, for the elimination of the Athol Springs highway crossing of these roads in Hamburg, N. Y.

PENNSYLVANIA—A contract has been awarded to the Fritz-Rumer-Cooke Company, Columbus, Ohio, for the construction of a subway under the tracks of the Pennsylvania where they are to be crossed by state highway route No. 118, about 0.9 mile south of Cokeburg Junction, Pa. The cost is estimated at approximately \$28,000.

WABASH—This company plans the construction of a 2,000,000-bu. grain elevator at Omaha, Neb., at a cost of about \$500,000.

Railway Finance

ALABAMA GREAT SOUTHERN.—Annual Report.—The 1929 annual report of this company shows net income after interest and other charges of \$2,520,861, as compared with net income in 1928 of \$2,566,343. Selected items from the income statement follow:

	1929	1928	Increase or Decrease
Average mileage operated	314.99	314.99	.....
RAILWAY OPERATING REVENUES	\$10,336,630	\$10,110,310	+\$ 226,320
Maintenance of way....	1,700,640	1,613,945	+ 86,695
Maintenance of equip't.	2,097,806	1,966,522	+ 131,284
Transportation	2,913,024	2,947,233	— 34,209
TOTAL OPERATING EXPENSES	7,342,308	7,163,284	+ 179,024
Operating ratio	71.03	70.85	+ .18
NET REVENUE FROM OPERATIONS	2,994,322	2,947,026	+ 47,296
Railway tax accruals ..	778,718	753,996	+ 24,722
Hire of equipment	388,501	495,098	— 106,597
Joint facility rents..	135,161	148,864	— 13,703
OPERATING INCOME	2,468,709	2,538,423	— 69,714
Non-operating income	594,678	584,823	+ 9,855
GROSS INCOME	3,063,387	3,123,246	— 59,859
Rent for leased roads	19,650	19,699	— 49
Net Income	2,520,861	2,566,343	— 45,482
Disposition of net income:			
Dividends of 14 per cent on preferred stock	473,249	473,249	.....
Dividends of 14 per cent on common stock	1,096,200	1,096,200	.....
Surplus for year carried to profit and loss...	951,412	996,894	— 45,482

ALLEGHANY CORPORATION.—Application to Hold Missouri Pacific Stock.—This company has applied to the Missouri Public Service Commission for permission to acquire and hold more than 10 per cent of the capital stock of the Missouri Pacific. The commission will conduct a public hearing on the application at Jefferson City, Mo., on April 21. The application does not state the exact amount of stock the Van Sweringen interests seek to obtain, except that it would exceed 10 per cent of the capital of the railroad outstanding. Under the Missouri statutes a foreign corporation cannot hold 10 per cent or more of the stock of a Missouri railroad or utility without express permission from the state public service commission.

BESSEMER & LAKE ERIE.—Annual Report.—The 1929 annual report of this road shows net income after interest and other charges of \$7,088,666, as compared with net income of \$5,012,066 in 1928.

Selected items from the income statement follow:

	1929	1928	Increase or Decrease
RAILWAY OPERATING REVENUES	\$17,912,973	\$15,794,736	+\$2,118,237
Maintenance of way....	1,355,492	1,313,414	+ 42,078
Maintenance of equip't.	3,971,548	3,676,963	+ 294,585
Transportation	3,909,532	3,757,406	+ 152,126
TOTAL OPERATING EXPENSES	9,847,698	9,290,358	+ 557,340
NET REVENUE FROM OPERATIONS	8,065,275	6,504,378	+ 1,560,897
Railway tax accruals ..	891,638	1,424,937	— 533,299
Railway operating income	7,173,549	5,079,332	+ 2,094,217
Hire of freight cars—Cr..	202,196	60,115	— 142,081
Joint facility rents..	41,715	38,423	+ 3,292
Non-operating income	880,156	712,338	+ 167,818
GROSS INCOME	8,053,705	5,791,670	+ 2,262,035
Rent for leased roads	6,236	5,964	+ 273
Interest on funded debt	680,071	716,471	— 36,400
TOTAL DEDUCTIONS FROM GROSS INCOME	965,038	779,603	+ 185,435
NET INCOME	7,088,666	5,012,066	+ 2,076,600

CANADIAN NATIONAL.—Annual Report.—Further evidence that the transportation industry of Canada has been passing through a difficult period is given in the annual report of the Canadian National tabled in the House of Commons at Ottawa, which disclosed gross revenues of \$259,978,972 in 1929 as compared with \$276,631,921 in 1928 and net from railway operations of \$45,062,080 as against \$58,383,577 in the previous year.

The adverse crop conditions, Sir Henry Thornton states, are reflected in a decrease in revenue from grain shipments amounting to \$15,509,311, or practically the whole of the decline experienced in freight revenues.

The year's operation produced \$39,038,974 applicable towards paying the interest due to the public on securities held, and other interest charges. The interest due the public on funded debt was \$45,258,920, interest on unfunded debt \$2,649,916, and accrued interest on government advances \$32,064,132 total income deficiency being \$40,933,944.

The report indicates that the examination of the financial structure of the Canadian National system and the development of plans for consolidation of the Canadian companies continue. The consolidation of subsidiary companies in the United States and the readjustment of their financial structures has made good progress.

Of the financing done by the Canadian National Railways in 1929, amounting to \$138,000,000, refunding amounted to \$32,836,636.

The financial structures of the Central Vermont Railway Inc., and the Grand Trunk Western Railway Company, will permit, the report states, the financing of their future normal requirements and should eliminate the necessity of the Canadian National Railways making future advances to these companies, or guaranteeing their securities.

The statement on operations of the eastern lines of the Canadian National Railways, covering the mileage east of Levis and Diamond Junction, P. Q., is dealt with separately. It shows gross revenue of \$30,618,007 in 1929, an increase of \$2,658,649, as compared with 1928. Operating expenses were \$33,815,382. The increase of \$1,961,252 (10.3 per cent) in revenues (6 per cent in tonnage hauled), was due principally to increases in shipments of paper and pulp, iron and steel articles, oil and gasoline, coal and coke, gravel and stone.

CENTRAL VERMONT.—Final Value.—The Interstate Commerce Commission has issued a final valuation report finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of 1917 to be \$16,366,850.

CHESAPEAKE & OHIO.—Stock.—Directors of this company meeting in Cleveland, Ohio, on April 15 authorized the filing of an application with the Interstate Commerce Commission for authority to issue \$38,000,000 of common stock to be sold to present stockholders at par.

CHICAGO & EASTERN ILLINOIS.—Final Valuation.—The Interstate Commerce Commission has issued a final valuation report as of 1915 finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$63,606,000 and of the property used but not owned \$4,997,844. The company had contended that its value should be \$128,746,495. The book investment was \$78,990,279, which the report says should be readjusted to \$70,998,064.

CHICAGO & NORTH WESTERN.—New Directors.—Arthur S. Pierce, treasurer and assistant secretary of the North Western at New York, and Edson S. Woodworth, president of the E. S. Woodworth Company, Minneapolis, Minn., have been elected directors, succeeding Oliver Ames and Chauncey Keep, both deceased.

CHICAGO, ROCK ISLAND & PACIFIC.—Bonds.—The U. S. & International Securities Corporation, as owner of 41,000 shares of Rock Island stock, has addressed a letter to Director Mahaffie of the Bureau of Finance of the Interstate Commerce Commission asking an opportunity to be heard before the commission takes action on the application for authority to issue \$32,228,000 of convertible bonds, convertible into common stock at \$125 a share, to be offered to stockholders at 95 and interest to the extent of 25 per cent of their holdings. The letter says that both the nature of the securities and the price impose unnecessary hardship on the holders of the common stock.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—New Directors.—R. N. Van

Doren, vice-president and general counsel of the Omaha and the Chicago & North Western, and C. W. Nash, president, Nash Motors Company, have been elected to fill vacancies on the board of directors.

DELAWARE & HUDSON.—Annual Report.—The 1929 annual report of this road shows net income after interest and other charges of \$7,808,713, as compared with net income in 1928 of \$6,358,759. Selected items from the income statement of the road follow:

	1929	1928	Increase or Decrease
Average mileage operated	891.31	893.80	— 2.49
RAILWAY OPERATING REVENUES	\$41,421,378	\$40,285,496	+ \$1,135,882
Maintenance of way....	5,127,034	4,740,694	+ 386,341
Maintenance of equip't.	9,541,936	9,388,659	+ 153,276
Transportation	14,775,907	14,713,568	+ 62,339
TOTAL OPERATING EXPENSES	32,235,572	31,685,731	+ 549,841
Operating ratio	77.82	78.65	— .83
NET REVENUE FROM OPERATIONS	9,185,806	8,599,765	+ 586,041
Railway tax accruals ..	1,135,500	1,122,128	+ 13,372
Railway operating income	9,684,818	9,135,808	+ 549,010
Hire of freight cars—Cr. ..	170,346	177,160	— 6,814
Joint facility rents..	239,165	214,203	+ 24,962
NET RAILWAY OPERATING INCOME	8,054,206	7,543,429	+ 510,777
Non-operating income	4,540,656	3,829,091	+ 711,565
GROSS INCOME	12,594,862	11,372,520	+ 1,222,342
Rent for leased roads	1,911,008	1,883,867	+ 27,141
Interest on funded debt	2,855,940	2,931,614	— 75,674
TOTAL DEDUCTIONS FROM GROSS INCOME	4,786,149	5,013,761	— 227,611
NET INCOME	7,808,713	6,358,759	+ 1,449,954

ERIE.—Annual Report.—The 1929 annual report of this company shows net income after interest and other charges of \$11,677,710, as compared with net income in 1928 of \$10,002,884. Selected items from the Erie's income statement follow:

	1929	1928	Increase or Decrease
Average mileage operated	2,315.97	2,316.80	— 0.83
RAILWAY OPERATING REVENUES	\$129,230,437	\$124,976,543	+ \$4,253,895
Maintenance of way..	15,130,939	15,238,304	— 107,365
Maintenance of equip't.	27,979,062	26,285,543	+ 1,693,519
Transportation ...	47,148,049	46,954,241	+ 193,809
TOTAL OPERATING EXPENSES	97,630,916	95,362,967	+ 2,267,949
Operating ratio	75.55	76.30	— .75
NET REVENUE FROM OPERATIONS	31,599,521	29,613,576	+ 1,985,945
Railway tax accruals ..	5,627,392	5,057,831	+ 569,560
Railway operating income	25,926,125	24,533,270	+ 1,392,856

	1929	1928	Increase or Decrease
Net equipment and joint facility rents	4,464,087	4,486,111	— 22,023
NET RAILWAY OPERATING INCOME	21,462,038	20,047,159	+ 1,414,879
Non-operating income	4,708,541	4,675,280	+ 33,261
GROSS INCOME	26,170,579	24,722,440	+ 1,448,139
Rent for leased roads	2,265,906	2,390,925	— 125,018
Interest on funded debt	11,243,406	11,199,320	+ 44,086
TOTAL DEDUCTIONS FROM GROSS INCOME	14,492,869	14,719,556	— 226,686
NET INCOME	11,677,710	10,002,884	+ 1,674,825

GEORGIA SOUTHERN & FLORIDA.—Annual Report.—The 1929 annual report of this company shows net income after interest and other charges of \$103,726, as compared with net income of \$113,366 in 1928. Selected items from the income statement follow:

	1929	1928	Increase or Decrease
Average mileage operated	397.73	398.75	— 1.02
RAILWAY OPERATING REVENUES	\$4,226,395	\$4,519,309	— \$292,914
Maintenance of way	865,874	892,539	— 26,665
Maintenance of equipment	996,907	886,486	+ 110,521
Transportation	1,568,522	1,770,464	— 201,942
TOTAL OPERATING EXPENSES	3,590,317	3,812,778	— 222,461
Operating ratio	84.95	84.37	+ 0.58
NET REVENUE FROM OPERATIONS	636,078	706,532	— 70,454
Railway tax accruals	278,168	273,394	+ 4,774
Hire of equipment	74,792	28,011	+ 46,781
Joint facility rents	2,820	23,405	— 20,585
OPERATING INCOME	427,624	435,950	— 8,326
Non-operating income	20,258	24,695	— 4,437
GROSS INCOME	447,882	460,645	— 12,763
Interest on funded debt..	297,145	297,622	— 477
TOTAL DEDUCTIONS FROM GROSS INCOME	337,817	342,120	— 4,303
NET INCOME	103,726	113,366	— 9,640

Disposition of net income: Dividends on 5 per cent preferred stock.. 88,400 88,400

Surplus for year carried to profit and loss

GREAT NORTHERN.—Notes.—This company has applied to the Interstate Commerce Commission for authority to guarantee \$3,446,880 of non-interest-bearing notes of the Cottonwood Coal Company.

ILLINOIS CENTRAL SYSTEM.—Annual Report.—The annual report of this road for 1929 shows net income after interest and other charges of \$13,520,383, as compared with net income in 1928 of \$13,250,498. Selected items from the income statement follow:

	1929	1928	Increase or Decrease
Average mileage operated	6,721	6,698	+ 22.63
RAILWAY OPERATING REVENUES	\$180,976,182	\$179,605,452	+ \$1,370,730

	1929	1928	Increase or Decrease
Maintenance of way..	23,764,278	22,671,351	+ 1,092,927
Maintenance of equip't.	41,160,186	40,927,225	+ 232,961
Transportation ...	64,512,117	64,087,176	+ 424,941
TOTAL OPERATING EXPENSES	139,430,071	137,479,786	+ 1,950,285
NET REVENUE FROM OPERATIONS	41,546,111	42,125,666	— 579,555
Railway tax accruals...	12,448,014	12,212,999	+ 235,014

Railway operating income 29,044,099 29,873,913 — 829,814
Hire of freight cars—Dr. 2,266,328 2,079,095 + 187,232
Joint facility rents 655,248 686,428 — 31,180

NET RAILWAY OPERATING INCOME... 27,743,259 28,917,199 — 1,173,940
Non-operating income 4,605,740 3,516,034 + 1,089,705

GROSS INCOME .. 32,348,999 32,433,234 — 84,235
Rent for leased roads 2,377,387 2,798,768 — 421,381
Interest on funded debt 16,044,597 15,788,773 + 255,824

TOTAL DEDUCTIONS FROM GROSS INCOME .. 18,828,615 19,182,736 — 354,121
NET INCOME 13,520,383 13,250,498 + 269,886

MAINE CENTRAL.—Bonds.—This company and the Portland & Ogdensburg have filed with the Interstate Commerce Commission a supplemental application for authority for the Maine Central to sell or pledge \$2,119,000 of 4½ per cent first mortgage bonds of the Portland & Ogdensburg at not less than 88 instead of 96, the price set in the original application.

MISSOURI PACIFIC.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$25,000,000 of first and refunding mortgage 5 per cent bonds, series H, the issue to mature in 1980, being redeemable after 1935 at premium ranging downward from 5 per cent. The bonds are authorized for sale to Kuhn, Loeb & Co., at 97¾ which will make the annual cost to the railroad 5.125 per cent.

NEW YORK, CHICAGO & ST. LOUIS.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$12,000,000 of its refunding mortgage 4½ per cent series C bonds, maturing in 1978 and redeemable at a premium of 2 per cent. The issue is authorized for sale to the Guaranty Company and Lee, Higginson & Co., at 95, which will make the cost to the railroad approximately 4.765 per cent.

NEW YORK, NEW HAVEN & HARTFORD.—Stock.—Stockholders of this company, meeting on April 16, voted to permit the directors to issue \$50,000,000 of common stock, a like amount of bonds and a like amount of notes.

PENNSYLVANIA.—Anti-Trust Complaint Set for Hearing.—The Interstate Commerce Commission has assigned for hearing on May 19 at Washington the complaint issued last year in which it charged the Pennsylvania with violation

(Continued on page 947)

Annual Report

Chicago, Milwaukee, St. Paul and Pacific Railroad Company

Second Annual Report, Year Ended December 31, 1929

To the Stockholders of Chicago, Milwaukee, St. Paul and Pacific Railroad Company:

The Board of Directors submits the following report of the operations and affairs of Chicago, Milwaukee, St. Paul and Pacific Railroad Company for the year ended December 31, 1929.

The net income of the Company after interest on funded debt, including 5% interest on Convertible Adjustment Mortgage Bonds, for the year 1929 was \$7,074,014.45, as compared with net income after similar deductions for the period January 14 to December 31, 1928, of \$9,261,971.46, a decrease of \$2,187,957.01. As stated in the first annual report of the Company for 1928, there were charges and credits arising out of transactions which took place prior to the date the present Company began operations (January 14, 1928), but determined and accounted for subsequent thereto, which resulted in a debit of \$2,371,153.06, which, in accordance with the accounting rules of the Interstate Commerce Commission, was not charged against the income of the present Company and so increased the net income for 1928 by that amount.

As a result of proceedings under the Railway Labor Act wage increases granted to shop crafts, enginemen, trainmen, clerks and others resulted in increased labor costs in 1929 of approximately \$1,184,000. Part of this total is because of wage increases granted in 1928 but not effective throughout the entire year and the balance is for wage increases granted in the first six months of 1929, the full effect of which will not be felt until 1930. As against these increased labor costs, non-operating income for 1929 increased over 1928 \$1,343,245, of which \$1,122,679 was the result of larger receipts from interest on loans and deposits and dividends on stocks owned.

A comparison of the figures entering into the net railway operating income for 1929 with the figures for the full year 1928, which includes thirteen days of the receivership, is as follows:

Railway operating revenues for 1929 were \$171,361,385 as compared with \$170,554,899 for 1928, or an increase of \$806,486. Freight revenue increased \$950,010. Mail revenue increased \$651,126, of which \$237,538 was a retroactive increase for the first seven months of 1928. (The total amount of retroactive mail pay received was \$1,421,205, of which \$1,183,667 applied to the period prior to January 14, 1928, and was not included in 1929 income.) Express revenue increased \$484,966. Passenger revenue decreased \$1,337,234. Milk revenue decreased \$206,801. Other miscellaneous transportation revenues decreased \$24,831.

Number of revenue passengers carried in 1929 was 7,444,431 as against 7,497,534 for 1928. Number of passenger miles was 572,419,772 for 1929 as against 611,062,432 for 1928. Average revenue per passenger for 1929 was \$2.25 as against \$2.41 for 1928, and the revenue per passenger per mile for 1929 was 2.92 cents as against 2.96 cents for 1928.

The continued decline in passenger and milk revenue was due to increased motor vehicle competition.

On March 1, 1929, the express operations formerly conducted by the American Railway Express Company were taken over by the Railway Express Agency, Incorporated, as agent for 86 railroad companies handling approximately 98% of express traffic, our company participating and owning 26 shares out of 1,000 shares of stock.

Freight revenue for the year 1929 amounted to \$137,176,432 as against \$136,226,422 for the year 1928. The average distance haul of freight for 1929 was 252 miles as compared with 259 for 1928. Revenue per ton of revenue freight for 1929 was \$2.64 as against \$2.73 for 1928. Freight revenue per ton per mile for 1929 was 10.48 mills as against 10.52 mills for 1928.

A study of the sources of freight revenue for the year 1929 compared with 1928 shows that the revenues from "Products of Agriculture" decreased \$3,181,524 or 13.03%, and tonnage decreased 670,248 or 8.47%; revenues from "Animals and Products" decreased \$258,339 or 1.75%, and tonnage increased 2,007 or .08%; revenues from "Products of Mines" increased \$1,419,720 or 6.87%, and tonnage increased 1,166,262 or 6.43%; revenues from "Products of Forests" decreased \$857,475 or 4.54% and tonnage decreased 21,555 or .28%; revenues from "Manufactures and Miscellaneous" increased \$3,453,798 or 8.34%

and tonnage increased 1,511,981 or 12.51%; revenues from L. C. L. freight increased \$373,830 or 2.33% and tonnage increased 16,488 or 1.09%.

The decrease in revenue from "Products of Agriculture" was general throughout the year, a reflection of the smaller crops in our territory. The greatest reductions were in wheat, corn, barley and rye, as follows:

	Tonnage Decrease	Per Cent	Revenue Decrease	Per Cent
Wheat	128,834	6.00	\$1,248,404	15.31
Corn	206,976	13.94	706,419	16.56
Barley and Rye	122,978	20.99	479,795	26.36
All other Agricultural Commodities	211,460	5.72	746,906	7.34
Total	670,248	8.47	\$3,181,524	13.03

The increase in "Products of Mines" was due principally to increased traffic in bituminous coal, the revenue of which increased \$1,501,352 or 12.15% and the tons increased 1,411,870 or 16.24%.

The decrease in revenue from "Products of Forests" was due principally to the decreased production of lumber in the states of Washington and Idaho.

The increase in revenue from "Manufactures and Miscellaneous" was due to increased revenues from commodities, as follows:

	Tonnage Increase	Per Cent	Revenue Increase	Per Cent
Petroleum oils, refined, and all other gasolines	273,550	15.35	\$832,376	11.47
Iron and steel pipe and fittings, n. o. s.	278,866	132.27	702,262	88.92
Iron and steel, rated 5th class in Official Classification, n. o. s.	370,716	26.99	324,795	12.11
Automobiles and automobile parts	134,203	27.02	335,234	6.07
Canned food products, n. o. s.	75,157	18.92	302,837	16.84
Manufactures and miscellaneous, n. o. s.	236,801	12.05	788,550	9.66
Other commodities	142,688	2.44	167,744	1.10

Expenditures for maintenance of way and structures for the year 1929 increased \$482,195; maintenance of equipment increased \$1,181,035; traffic expenses increased \$185,785; transportation expenses increased \$1,582,281; miscellaneous operations increased \$37,235; general expenses increased \$224,778; transportation for investment—Cr. increased \$133,079. The total railway operating expenses for 1929 were \$128,800,861, an increase of \$3,560,230 over 1928.

The operating expenses for 1928 amounted to \$125,240,631 but did not contain charges of \$2,034,194 representing transactions which on account of the change of ownership were charged back to the period prior to January 14, 1928. The comparison, therefore, should be \$127,274,825 for 1928 with \$128,800,861 for 1929, which shows an increase in 1929 of \$1,526,036.

Railway tax accruals decreased \$590,522 of which \$358,808 was due to decrease in federal income taxes.

The rate of return earned on investment in road and equipment, including material and supplies and cash at the beginning of the year, was 3.58% as compared with 3.84% for the year 1928 and with 5.75% fixed by the Interstate Commerce Commission as a fair rate of return. For the entire Western District the average rate of return for 1929 was 4.56% as compared with 4.35% for 1928. For the Northwestern Region, in which this Company is grouped, the rate of return for 1929 was 4.15% as compared with 4.04% for 1928. The deficiency in the fair return for the Western District for 1929 was \$128,614,000 as compared with \$149,398,000 for 1928: for the Northwestern Region, \$56,573,000 as compared with \$60,198,000 for 1928; for this Company, \$15,980,000 as compared with \$14,521,000 for 1928.

In the annual report for 1928 reference was made to the application of the Western Trunk Line carriers to the Interstate Commerce Commission for an increase in class rates. The proposed report by the Examiners of the Commission was promulgated on August 6, 1929, and argument thereon has been heard by the Commission. It is hoped the final decision will be announced in the near future. The rates in Western Trunk Line territory are conceded to be unduly low as compared with the rate levels in surrounding groups, and a correction of this situation, in so far as the class rates are concerned, will be decidedly helpful to this Company.

On December 13, 1929, application was made to the Interstate Commerce Commission for authority to acquire and operate the property of the Chicago, Milwaukee and Gary Railway Company, the entire stock of which was acquired in 1922. This application was granted on February 8, 1930, and the property will be taken over for ownership and operation April 1, 1930.

The operated mileage at the close of the year and the income for the year ended December 31, 1929, were as follows:

OPERATED MILEAGE AT CLOSE OF YEAR	
Miles of road	11,247.83
Miles of additional main tracks	1,295.43
Miles of yard tracks and sidings	4,319.68
Total Mileage Operated	16,862.94

CONDENSED INCOME ACCOUNT YEAR ENDED DECEMBER 31, 1929

RAILWAY OPERATING INCOME:	
Railway operating revenues	\$171,361,385.36
Railway operating expenses	128,800,860.77
Net railway operating revenue	\$ 42,560,524.59
Railway tax accruals	\$ 9,648,912.33
Uncollectible railway revenues	12,589.11
Railway operating income	\$ 32,899,023.15
Equipment rents—debit balance	\$ 3,995,309.23
Joint facility rents—debit balance	2,629,390.57
Net railway operating income	\$ 26,274,323.35
NON OPERATING INCOME:	
Rents from lease of road	\$ 339,018.24
Rents received—Other	749,481.63
Dividends on stocks	811,686.02
Income from funded securities:	
Interest on bonds and notes	892,496.25
Interest on advances to affiliated companies	8,997.86
Income from unfunded securities and accounts:	
Interest on demand loans and deposits and time loans and deposits	1,054,164.63
Interest on equipment trust funds	20,864.52
Interest on bank balances	192,263.86
Miscellaneous interest	2,608.66
Miscellaneous income	15,669.13
Net railway and non operating income	\$ 30,361,574.15
DEDUCTIONS:	
Rents paid—Lease of road	\$ 1,100,516.71
Rents paid—Other	61,348.90
Interest on unfunded debt	29,034.00
Miscellaneous	94,606.44
Net income before deduction for interest on funded debt	\$ 29,076,068.10
INTEREST ON FUNDED DEBT:	
Fixed interest bearing obligations	\$12,858,369.00
Convertible adjustment mortgage bonds (5% declared)	9,143,684.65
Net income	\$ 7,074,014.45
Income applied to sinking and other reserve funds	11,991.46
Net income transferred to Profit and Loss	\$ 7,062,022.99

Capital Stock

On December 31, 1928, the share capital of the Company consisted of 1,191,750 shares of Preferred Stock, par value \$100.00 per share, and 1,174,060 shares of Common Stock, without par value.

Preferred Stock has been increased 638 shares, issued in payment of unsecured claims against Chicago, Milwaukee and St. Paul Railway Company.

The Capital Stock outstanding as of December 31, 1929, was as follows:

Preferred Stock, 1,192,388 Shares	\$119,238,800.00
Common Stock, 1,174,060 Shares	(No par value)

Funded Debt

On December 31, 1929, funded debt outstanding in the hands of the public amounted to \$463,822,789 as compared with \$459,378,289 on December 31, 1928, or an increase of \$4,444,500, explained as follows:

Par value of Equipment Trust Certificates 5%, Series "J," issued and sold	\$8,370,000
Less—	
Principal amount of Equipment Trust Notes maturing during the year and paid	\$3,889,500
Bellingham Bay & British Columbia Railroad Co. 5% bonds purchased for Sinking Fund	36,000
	3,925,500
	\$4,444,500

Treasury Bonds

At the close of the year ended December 31, 1929, there were in the Treasury of the Company, or pledged, bonds to the amount of..... \$26,276,000.00

Composed of the following:

C. M. & St. P. Ry. Co. General Mortgage Bonds—Series D 5%: Pledged under Ten Year 6%, First Mortgage Bonds Security, Gold Loan of 1924 called for retirement July 1, 1928, of which \$3,000, principal amount, were not presented as of December 31, 1929	\$20,000,000.00
In Treasury—Unpledged	5,453,000.00
	\$25,453,000.00

C. M. & St. P. Ry. Co. General Mortgage Bonds—Series A 4%: In Treasury—Unpledged	759,000.00
Milwaukee & Northern R. R. Co. First Mortgage 4½% Bonds: Pledged under First and Refunding Mortgage Milwaukee & Northern R. R. Co. Consolidated Mortgage 4½% Bonds: Pledged under First and Refunding Mortgage Bellingham Bay & British Columbia R. R. Co. 5% Bonds held for Sinking Fund: In Treasury—Unpledged	38,000.00
	20,000.00
	6,000.00
Total	\$26,276,000.00

Investment in Road and Equipment

The expenditures chargeable to Investment in Road and Equipment during the year ended December 31, 1929, and the total Investment in Road and Equipment December 31, 1929, were as follows:

Equipment purchased and constructed:	
1700 Automobile cars, purchased	\$4,452,743.48
650 Stock cars, purchased	1,267,101.89
968 Ballast cars, purchased	2,557,565.32
171 Ore cars, purchased	365,282.25
500 Flat cars, purchased	879,880.31
15 Caboose cars, constructed	44,075.55
10 Mail apartment cars, constructed	211,983.55
1 Steam propelled mail and baggage car, purchased	50,364.64
9 Locomotive cranes, purchased	62,444.95
1 Locomotive ditcher, purchased	33,406.65
2 Ballast dressing machines, purchased	22,419.00
1 Ballast spreader, constructed	6,581.13
4 Slope levelers, constructed	9,946.61
3 Other company service units, purchased	7,778.14
4 Other company service units, constructed	10,522.15
Miscellaneous Equipment:	
3 Motor busses, purchased	33,397.41
12 Automobile trucks, purchased	14,451.59
7 Passenger automobiles, purchased	3,558.09
Other Additions and Betterments to Equipment:	
11 Compound mallet type locomotives converted to single expansion locomotives	136,175.80
20 Express cars equipped with steel underframes	52,496.20
Miscellaneous conversion of equipment	182,572.38
Improvements to other equipment	459,382.77
Gross Additions and Betterments—Equipment	\$ 10,864,129.86
Credit—Equipment retired or converted	901,080.47
Net Additions and Betterments—Equipment	\$ 9,963,049.39
Additions and Betterments—Road:	
Land for transportation purposes	\$ 674,857.48
Grading	777,456.63
Tunnels and subways	355.02
Bridges, trestles and culverts	1,601,006.11
Elevated structures	515.53
Ties	350,087.32
Rails	889,569.90
Other track material	1,456,095.41
Ballast	154,354.81
Track laying and surfacing	361,876.31
Right of way fences, etc.	14,485.36
Crossings and signs	368,106.71
Station and office buildings	726,571.70
Roadway and miscellaneous buildings	122,494.63
Water and fuel stations	385,962.12

EQUIPMENT TRUST CERTIFICATES SOLD DURING THE YEAR 1929

Description of Security	Date Sold	Par Value	Selling Price	Discount	Expense	Net Proceeds Realized
Chicago, Milwaukee, St. Paul and Pacific Railroad Equipment Trust Certificates, Series J—5%	June 3, 1929	\$8,370,000	98.08%	\$160,704.00	\$11,536.80	\$8,197,759.20

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Shops and engine houses	934,231.56
Wharves and docks	23,431.42
Telegraph and telephone lines	64,963.90
Signals and interlockers	199,878.53
Power stations, transmission systems, etc.	137,285.36
Paving and assessments	109,444.55
Roadway machines and tools	167,536.06
Shop machinery	606,416.59
Miscellaneous	206,063.88

Gross Additions and Betterments—Road..\$10,333,046.89
Credit—Road property retired or converted

Net Additions and Betterments—Road..... 8,053,882.83

Net Additions and Betterments—Road and Equipment... \$ 18,016,932.22

GENERAL BALANCE SHEET

ASSET SIDE	As of December 31, 1929	Comparison with December 31, 1928 + Increase — Decrease
INVESTMENTS:		
Road and equipment.....	\$700,277,366.42	\$+ 17,728,580.51
Improvements on leased railway property	\$ 363,392.42	\$+ 32,735.79
Sinking funds	\$ 1,111.57	\$— 17,240.32
Deposits in lieu of mortgaged property sold	\$ 97,200.54	\$+ 20,653.36
Miscellaneous physical property.....	\$ 4,964,438.51	\$+ 275,484.56
Investments in affiliated companies:		
Stocks	\$ 5,377,752.40	\$— 36,075.00
Bonds	1,160,800.00	— 160,898.65
Notes	11,425,069.16	+ 245,931.32
Advances	7,326,822.10	+ 48,957.67
	\$ 25,290,443.66	\$+ 48,957.67
Other Investments:		
Stocks	\$ 7,870.39	\$+ 15.00
Bonds	165,250.00	— 1,450.00
Notes	539,154.34	+ 380.00
Miscellaneous	2,791.35	— 757.54
	\$ 715,066.08	\$— 1,812.54
Total investments	\$731,709,019.20	\$+ 18,087,359.03
CURRENT ASSETS:		
Cash	\$ 7,856,128.50	\$+ 53,867.66
Demand loans and deposits	5,700,000.00	— 4,900,000.00
Time deposits	1,314,772.74	— 4,138,717.67
Special deposits	1,613,083.49	+ 1,574,143.49
Loans and bills receivable.....	9,915,197.49	+ 4,904,095.06
Traffic and car-service balances receivable	694,980.53	— 59,353.39
Due from agents and conductors....	3,723,728.40	— 219,590.94
Miscellaneous accounts receivable	3,345,239.17	+ 131,058.59
Material and supplies	13,925,510.53	+ 1,053,372.52
Interest and dividends receivable....	615,219.58	+ 142,711.73
Rents receivable	177.00	— 177.00
Other current assets	71,393.98	— 16,984.34
Total current assets	\$ 48,775,431.41	\$— 1,475,574.29
DEFERRED ASSETS:		
Working fund advances.....	\$ 49,358.98	\$+ 1,068.29
Other deferred assets	2,490,147.21	— 184,308.17
Total deferred assets	\$ 2,539,506.19	\$— 183,239.88
UNADJUSTED DEBITS:		
Insurance premiums paid in advance. \$	17,200.48	\$+ 236.86
Other unadjusted debits	4,044,425.05	— 137,072.31
Total unadjusted debits.....	\$ 4,061,625.53	\$— 136,835.45
GRAND TOTAL	\$787,085,582.33	\$+ 16,291,709.41

† Includes \$2,549,491.25 payable January 1, 1930.

* Includes—
Ten Year First Mortgage Bonds Security Gold Loan of 1924, called as of July 1, 1928.....\$3,000.00
Miscellaneous matured bonds covered by cash deposits.. 4,000.00
\$7,000.00

Profit and Loss Account December 31, 1929

DEBIT	
Appropriated from surplus account of donations.....	\$ 77,979.81
Debit discount extinguished through surplus.....	179,914.15
Loss on retired road	564,459.31
Miscellaneous debits	112,334.38
Credit balance, December 31, 1929, carried to general balance sheet	14,706,692.09
	\$15,641,379.74

Road and Equipment, December 31, 1928..\$682,548,785.91

Less—Adjustment of Road and Equipment as of January 14, 1928..... 288,351.71 682,260,434.20

Road and Equipment, December 31, 1929.....\$700,277,366.42

General balance sheet, income, profit and loss and other tables relating to corporate affairs and statements showing results of operation are appended hereto.

The Board records its appreciation of the co-operation and the loyal and efficient services rendered by the officers and employees throughout the year.

By order of the Board of Directors.

April 1, 1930.

H. A. SCANDRETT,
President.

GENERAL BALANCE SHEET

LIABILITY SIDE	As of December 31, 1929	Comparison with December 31, 1928 + Increase — Decrease
CAPITAL STOCK:		
Common Stock:		
In hands of public (1,174,060 shares—no par value)	\$138,429,595.78	\$+ 720,145.59
Preferred Stock:		
In hands of public.....	119,238,800.00	+ 63,800.00
Total Capital Stock	\$257,668,395.78	\$+ 783,945.59
GOVERNMENTAL GRANTS:		
Grants in aid of construction.....	\$ 11,697.06	\$+ 8,886.26
FUNDED DEBT—UNMATURED:		
Bonds:		
In hands of Public:		
Fixed interest bearing.....	\$237,726,096.00	\$— 36,000.00
Contingent interest bearing.....	182,873,693.00	— 52,000.00
In Treasury of Company.....	6,218,000.00	+ 58,000.00
Pledged	20,058,000.00	+ 30,000.00
	\$446,875,789.00	\$— 30,000.00
Equipment Obligations:		
Equipment gold notes	6,573,000.00	— 1,095,500.00
Equipment Trust certificates.....	36,650,000.00	+ 5,576,000.00
	\$490,098,789.00	\$+ 4,450,500.00
Less bonds unsold:		
Held in Treasury or pledged.....	26,276,000.00	+ 6,000.00
Total Funded Debt unmatured....	\$463,822,789.00	\$+ 4,444,500.00
Total Capital Stock, Funded Debt and Governmental Grants.....	\$721,502,881.84	\$+ 5,237,331.85
CURRENT LIABILITIES:		
Loans and bills payable.....	\$ 42,921.62	\$— 250,167.31
Traffic and car-service balances payable	3,451,175.38	+ 137,479.83
Payrolls and vouchers	10,985,891.66	+ 692,389.06
Miscellaneous accounts payable.....	361,957.25	+ 18,280.02
*Interest matured unpaid.....	3,006,575.48	+ 21,372.81
†Funded debt matured unpaid.....	7,000.00	— 685,000.00
Unmatured interest accrued.....	7,400,319.33	— 950,210.83
Unmatured rents accrued.....	304,540.03	+ 2,333.50
Other current liabilities	463,427.62	— 99,791.83
Total current liabilities.....	\$ 26,023,808.37	\$— 1,113,314.75
DEFERRED LIABILITIES:		
Other deferred liabilities	\$ 862,734.07	\$— 157,683.02
Total deferred liabilities	\$ 862,734.07	\$— 157,683.02
UNADJUSTED CREDITS:		
Tax liability	\$ 8,342,665.07	\$+ 118,784.74
Accrued depreciation—Equipment....	10,923,243.35	+ 5,722,587.95
Other unadjusted credits.....	4,519,705.23	+ 69,411.72
Total unadjusted credits.....	\$ 23,785,613.65	\$+ 5,910,784.41
CORPORATE SURPLUS:		
Additions to property through income and surplus	\$ 178,838.43	\$+ 77,979.81
Funded debt retired through income and surplus	23,808.03	+ 23,808.03
Sinking fund reserve—Bell, Bay & Brit. Col. R. R. Co.....	1,205.85	— 11,816.57
Total appropriated surplus.....	\$ 203,852.31	\$+ 89,971.27
Profit and loss, credit balance.....	14,706,692.09	+ 6,324,619.65
Total corporate surplus.....	\$ 14,910,544.40	\$+ 6,414,590.92
GRAND TOTAL	\$787,085,582.33	\$+ 16,291,709.41

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Financial News

(Continued from page 943)

of the Clayton antitrust law in the acquisition, through the Pennsylvania Company, of stock of the Wabash and Lehigh Valley. The hearing is to be before Commissioner Meyer and C. V. Burnside, assistant director of the commission's Bureau of Finance.

PENNSYLVANIA.—Lease.—This company has applied to the Interstate Commerce Commission for authority to lease the New York & Pennsylvania for 999 years.

Abandonment.—The Grand Rapids & Indiana and the Pennsylvania have applied to the Interstate Commerce Commission for authority to abandon the line from Merritt to Michelson, Mich., 6 miles.

PERE MARQUETTE.—Trackage Rights.—This company has applied to the Interstate Commerce Commission for authority to operate under trackage rights over the Erie's Niagara Falls branch between Suspension Bridge and the East Buffalo Freight yards, New York.

READING.—Abandonment.—The Interstate Commerce Commission has authorized the Reading, Marietta & Hanover to abandon its line extending from Chickies, Pa., to Marietta Jct., 6.2 miles, and the Reading Company, which has operated the line under contract, has been authorized to abandon its operation.

SOUTHERN PACIFIC.—Bonds.—Kuhn, Loeb & Co., are offering \$41,294,000 of Oregon lines first mortgage 4½ per cent series A Bonds of this company, the issue to mature in 1977 and redeemable at premiums ranging downward from 5 per cent. The issue is subject to approval of the Interstate Commerce Commission and is priced at 97½ to yield 4.63 per cent.

VIRGINIAN.—Annual Report.—The 1929 annual report of this company shows net income of \$5,752,784, after interest and other charges, as compared with net income in 1928 of \$4,237,471. Selected items from the income statement follow:

	1929	1928	Increase or Decrease
Average mileage operated	545.16	545.16	.....
RAILWAY OPERATING REVENUES	\$19,871,636	\$18,480,118	+ 1,391,518
Maintenance of way....	1,951,724	1,861,405	+ 90,319
Maintenance of equip't.	3,593,529	3,809,546	— 216,017
Transportation	3,901,411	3,892,597	+ 8,814
TOTAL OPERATING EXPENSES ...	9,981,399	10,103,840	— 122,441
Operating ratio	50.23	54.67	— 4.44
NET REVENUE FROM OPERATIONS ...	9,890,237	8,376,278	+ 1,513,959
Railway tax accruals ..	2,036,000	1,886,000	+ 150,000
Railway operating income	7,853,952	6,489,988	+ 1,363,964
Hire of equipment (Net)	881,913	557,532	+ 324,381
GROSS INCOME	9,723,460	8,316,084	+ 1,407,376
Interest on funded debt	2,767,200	2,767,200	.....

	1929	1928	Increase or Decrease
TOTAL DEDUCTIONS FROM GROSS INCOME	3,970,677	4,078,613	— 107,936
NET INCOME	5,752,784	4,237,471	+ 1,515,313

VIRGINIAN.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$5,795,500 of its first mortgage 4½ per cent bonds, series B, maturing in 1962, to be redeemable at a premium of 2½ per cent. A total of \$5,000,000 of this issue has been authorized for sale to the National City Company and Lee, Higginson & Co., at 94¼, which will make the average annual cost to the railroad approximately 4.84 per cent, the remaining \$795,500 of these bonds to be held in the railroad's treasury subject to further order of the commission.

WEST JERSEY & SEASHORE.—Annual Report.—The annual report of this company for 1929 shows net income after interest and other charges of \$1,887,957, as compared with net income of \$995,208 in 1928. Selected income statement items follow:

	1929	1928	Increase or Decrease
Average mileage operated	369.47	370.59	— 1.12
RAILWAY OPERATING REVENUES	\$10,435,800	\$10,484,098	— \$ 48,298
Maintenance of way....	1,409,851	1,537,628	— 127,777
Maintenance of equip't.	1,355,259	1,479,199	— 123,940
Transportation	4,216,016	4,656,014	— 439,997
TOTAL OPERATING EXPENSES ...	7,274,769	8,084,156	— 809,387
NET REVENUE FROM OPERATIONS ...	3,161,031	2,399,942	+ 761,089
Railway tax accruals ..	1,037,028	1,070,863	— 33,836
Railway operating income	2,123,654	1,328,140	+ 795,514
Hire of equipment—Dr.	185,233	190,111	— 4,878
Joint facility rents—Dr.	60,221	167,415	— 107,194
NET RAILWAY OPERATING INCOME ..	1,878,200	970,614	+ 907,586
Non-operating income	231,023	246,604	— 15,581
GROSS INCOME	2,109,223	1,217,219	+ 892,005
Interest on funded debt	196,965	201,296	— 4,331
TOTAL DEDUCTIONS FROM GROSS INCOME	221,266	222,011	— 745
NET INCOME	1,887,957	995,208	+ 892,750

Dividends Declared

Atchison, Topeka & Santa Fe.—Common, \$2.50, quarterly, payable June 2 to holders of record May 2.

Atlantic Coast Line.—Common, \$3.50, semi-annually; Common, Extra, \$1.50, both payable July 10 to holders of record June 12.

Bangor & Aroostook.—Common, \$.87, quarterly; Preferred, \$1.75, quarterly, both payable July 1 to holders of record May 31.

New Orleans, Texas & Mexico.—\$1.75, quarterly, payable June 2 to stockholders of record May 16.

Pittsburgh & Lake Erie.—Extra, \$5.00, payable May 15 to holders of record April 25.

Average Prices of Stocks and of Bonds

	Apr. 15	Last week	Last year
Average price of 20 representative railway stocks.	133.94	136.11	129.65
Average price of 20 representative railway bonds..	93.45	94.08	91.60

Railway Officers

Executive

C. P. Couch has been elected executive vice-president of the Louisiana & Arkansas and Louisiana, Arkansas & Texas, (successor to the Louisiana Railway & Navigation Company), with headquarters at Shreveport, La. He will devote his entire time to the upbuilding and operation of the lines and the direction of development work in the territory served by the company. In accepting the executive vice-presidency of the L. & A. lines, Mr. Couch returns to the first line of work in which he was engaged. He commenced his railway career in 1906, with the Louisiana & North West. Later he engaged in the telephone and electric power business and had a large part in developing the interconnected power systems of present Louisiana, Arkansas and Mississippi power and light companies. In 1923, he became vice-president and general manager of the Mississippi Power & Light Company. Since the latter part of 1927, Mr. Couch has been vice-president and general manager of the Southern Ice & Utilities Company, with headquarters at Dallas, Tex., a position he is resigning to take up the work with the Louisiana & Arkansas. He is a director of the Mississippi Power & Light Company, of the Bankers Trust Company of Little Rock, Ark., and is also interested in various other enterprises of the territory.

Great Western Control Changes Hands

The change in control of the Chicago Great Western, which was first evidenced late in 1929, with the election of Victor V. Boatner as president and the relinquishment by the late Samuel M. Felton of the chairmanship of the executive committee, was shown at the annual meeting on April 8 when Patrick H. Joyce was elected chairman of the executive committee, Bernard E. Sunny was elected chairman of the board and John W. O'Leary was elected vice-chairman of the board. Of the 600,000 shares of preferred and common stock represented in person or by proxy at the meeting, the great majority of the stock voted was controlled by Mr. Joyce, Mr. O'Leary and their associates, demonstrating that this group has acquired a controlling interest in the road.

In a statement commenting upon the voting, Mr. Joyce said:

"This large representation clearly demonstrates a new and revived interest in the affairs of the Great Western and is an indication of what may be expected in the way of building this property up to a high order of efficiency. Among the important business transacted at the meeting was the enactment of a new set of by-laws which will result in a marked change in the policy of the road. Under

the new by-laws the general direction of the operation of the railroad will be under the control of Victor V. Boatner, the president. The general charge and control of the finances of the corporation, including matters pertaining to mergers and consolidations, will be under the direction and control of the executive committee headed by Mr. Joyce. The officers and directors are in complete harmony and under the new plan of management expect to achieve a great deal. This plan should appeal to shippers, because it means concentration on matters of operation and service and a financial set-up which should result in greatly improving the equipment and property generally."

P. De C. Ball of St. Louis, Mo., and George H. Prince, chairman of the board of the First National Bank, St. Paul, Minn., were elected as members of the board of directors.

Mr. Joyce, a native of Chicago, has spent his entire life in railway service and in the railway supply business. After a time spent as a trainman he entered the supply field and in 1918, when the Liberty Car & Equipment Co. was organized and purchased the freight car plant of the Central Locomotive & Car Works at Chicago he was elected president of the former company. In the following year the Liberty Car Wheel Company at Hammond, Ind., was organized with Mr. Joyce as president. When the Liberty Car & Equipment Co. and the Illinois Car & Manufacturing Co. at Hammond were merged in 1921, he became president of the combined companies. The consolidated companies retained the latter name and in 1928 that organization was purchased by the Standard Steel Car Company, Mr. Joyce being retained as vice-president. With the organization of the Standard Steel Car Corporation as a Pullman subsidiary early in 1930, Mr. Joyce became president of the new company. His connection with the Great Western dates from his selection as a director on April 2, 1929.

Mr. Sunny, the new chairman of the board of the Great Western, has been connected with the telephone industry since the age of 19 years. Since 1908 he has been successively president and chairman of the board of the Chicago Telephone Company and chairman of the board of its successor, the Illinois Bell Telephone Company.

Mr. O'Leary, who has been elected vice-chairman of the board of the Great Western, is a banker and manufacturer. At the present time he is president of the National Bank of the Republic and of Arthur J. O'Leary & Son Co., manufacturers of iron and steel products, in addition to other industrial and banking interests.

Financial, Legal and Accounting

E. A. Reynolds has resigned as auditor of receipts of the Gulf, Mobile & Northern and the New Orleans Great Northern, with headquarters at Mobile,

Ala., to engage in other business at Chicago.

Operating

J. T. McCarthy, assistant trainmaster on the Panhandle division of the Pennsylvania, has been transferred to the Pittsburgh division, succeeding C. L. Sheets, who has been granted a leave of absence. E. C. Forester, yardmaster on the Panhandle division, has been promoted to assistant trainmaster on the Akron division, to succeed William E. Schaffter, who has been transferred to the Panhandle division to replace Mr. McCarthy. L. D. Conner, general yardmaster at Erie, Pa., has been promoted to assistant trainmaster on the Buffalo division.

Following abolition, through consolidation, of the Trenton, Norfolk and Delaware divisions of the eastern region of the Pennsylvania, and the Cresson division of the central region, official changes in the operating department of that road have been announced, as follows: W. R. Davis, superintendent of the Delaware division, will serve in this capacity on the new Delmarva division, formed by the consolidation of the Delaware and Norfolk divisions, with headquarters at Cape Charles, Va.; A. B. Clark, superintendent of the Trenton division, which has been divided between the Camden terminal division and the New York division, has been appointed assistant to the chief engineer at Philadelphia, Pa.; G. W. Curtiss, superintendent of the Norfolk division, will serve as general agent at Trenton, N. J., and A. B. Cuthbert, superintendent of the Cresson division, which has been merged with the Pittsburgh division, will serve as assistant to the general superintendent of the western Pennsylvania division, with headquarters as before at Cresson, Pa.

J. T. Stanford, who has been promoted to superintendent of the Iowa division of the Illinois Central, with headquarters at Fort Dodge, Iowa, has

been connected with that road for nearly 30 years. He entered Illinois Central service in 1900 as an operator at Kankakee Junction, Ill. From December of that year until 1920 he served successively as agent at Swygert, Ill., assistant agent and operator at Pontiac, Ill., relief agent at Merna, Ill., Ashkum, Mattoon and Grand Crossing, car clerk and claim clerk in the office of the superintendent at Chicago, assistant chief clerk, and chief clerk to the superintendent, chief clerk to the general car agent and general yardmaster at Champaign, Ill. In February, 1920, Mr. Stanford was advanced to trainmaster of the Chicago, Bloomington, Pontiac and Tracy districts of the Illinois division at Champaign. He held that position until his promotion to superintendent of the Iowa division on February 1, with the exception of eight months in 1925 and 1926 when he was on detached service as a member of the American Railway Association Committee on Utilization of Locomotives.

Traffic

George H. Dermeyer, commercial agent of the Mississippi Central at Little Rock, Ark., has been promoted to general agent at that point.

Effective April 15, W. H. Howard will serve as general passenger agent of the Atlantic Coast Line, with headquarters at Wilmington, N. C.

Gilbert J. White, traffic representative for the Boston & Maine at Memphis, Tenn., has been promoted to general agent at that point, succeeding H. H. Schutt, deceased.

C. W. Wells, chief of tariff bureau of the Atlantic and Central regions of the Canadian National, has been appointed assistant general freight agent in charge of rates and tariffs, lines, Armstrong and west, Port William and east. J. A. Argo has been appointed chief of tariff bureau, with jurisdiction over the same territory.

Changes in Canadian Pacific Traffic Department

As announced in the *Railway Age* of April 12, C. E. McPherson, assistant passenger traffic manager of the Canadian Pacific at Winnipeg, Man., will retire on May 1, after more than 50 years of railroad service, and will be succeeded by N. R. DesBrisay, general passenger agent at Vancouver, B. C. Other promotions in the passenger department are: H. W. Brodie, assistant passenger traffic manager of the eastern lines at Montreal, Que., to overseas traffic manager, with headquarters at the same point; R. G. McNeillie, general passenger agent at Winnipeg, to assistant passenger traffic manager of the eastern lines at Montreal; H. R. Mathewson, general agent for passenger traffic at Toronto, Ont., to general passenger agent at Winnipeg, and E. F. L. Sturdee, assistant

general passenger agent at Montreal, to general passenger agent at Vancouver.

C. E. McPherson was born on June 7, 1862, at Chatham, Ont. He commenced his railway career as a ticket clerk for the Grand Trunk at Toronto in 1876. From 1882 to 1886 he served as assistant general agent with the Chicago, Rock Island & Pacific in Canada, and in the latter year he became connected with the Canadian Pacific as a general traveling agent. In 1887, he was sent to Boston, Mass., as district passenger agent, remaining there until 1891, when he went to St. John, N. B., as assistant general passenger agent. In 1895, he became assistant general passenger agent at Toronto, and four years later he was promoted to general passenger agent of the western lines, with headquarters at

Winnipeg. In 1910, he was advanced to assistant passenger traffic manager, the position he has held until the present time. Mr. McPherson will relinquish active duties, but will continue to act in an advisory capacity in passenger de-



C. E. McPherson

partment affairs, and on executive assignments.

N. R. DesBrisay, who becomes assistant passenger traffic manager at Winnipeg, joined the Canadian Pacific in 1904 as stenographer in the passenger department at St. John, N. B. In 1907, he was appointed ticket agent on the C.P.R. steamer "Empress of Ireland." He then served for a time in a similar capacity at Halifax, N. S., and in May, 1910, was promoted to cashier at Quebec, P. Q. In February, 1913, he was advanced to traveling passenger agent with headquarters at St. John, and in July of the following year he was transferred in a similar capacity to Montreal. In January, 1916, he was appointed traveling passenger agent at New York, and in



N. R. DesBrisay

October, 1916, was advanced to district passenger agent at St. John. In 1922, he was promoted to assistant general passenger agent in Winnipeg. In 1926, he became general passenger agent at Vancouver, B. C., the position he vacates to succeed Mr. McPherson as assistant passenger traffic manager.

H. W. Brodie, who becomes overseas passenger manager, was born at Fredericton, N. B., on June 8, 1874, and was educated in the public schools at St. John. He entered railway service with the Manchester, Robertson & Allison in St. John in 1889 as an office boy and went with the Canadian Pacific in 1895 as a clerk. Shortly thereafter he was transferred to Boston and then to Toronto, where after a few months he was advanced to the position of chief clerk. In 1899,



H. W. Brodie

he was transferred to Winnipeg in the same capacity and in 1903 he was promoted to assistant general passenger agent at that place. In 1910, he was appointed general passenger agent at Vancouver and in 1922, he was advanced to assistant passenger traffic manager, in which capacity he has served until his recent promotion. In his new position he will specialize on the development of new and additional traffic to Canada from overseas.

R. G. McNeillie, appointed assistant passenger traffic manager of the eastern lines, was born at Lindsay, Ont., on July 1, 1883, and entered the service of the Canadian Pacific in October, 1901, as a stenographer in the general passenger department at Winnipeg. He was promoted to district passenger agent at Nelson,



R. G. McNeillie

B. C., in October, 1909, and remained there until April, 1910, when he was transferred in a similar capacity to Cal-

gary, Alta. On July 1, 1913, he was advanced to the position of assistant general passenger agent at Winnipeg, and in 1922 he was promoted to general passenger agent.

H. R. Mathewson, appointed general



H. R. Mathewson

agent at Winnipeg, commenced his railway career in 1904, as a clerk in the passenger department of the Canadian Pacific in Montreal. In 1911, he was transferred to the Chicago office, thence to the Toronto and New York offices, returning to Chicago as travelling passenger agent in 1916, and going to St. John in the same capacity in the following year. In 1920 he became assistant general agent in Chicago, and in 1924 general agent at Buffalo. He was appointed general agent at Toronto in 1928, the position he held before his recent appointment.

E. F. L. Sturdee, who has been appointed general passenger agent at Vancouver, commenced his railway career as a clerk in the colonization department at Moncton, N. B. In 1897, he was



E. F. L. Sturdee

transferred to Toronto, and in 1902 entered the general passenger department in Montreal, becoming chief clerk in 1911. In 1913 he was appointed assistant district passenger agent at Toronto, and two years later became general agent of the passenger department in Boston. In 1919 he was transferred to the Pacific

coast as general agent at Seattle, Wash. Five years later he was appointed to the Oriental organization of the Canadian Pacific as acting general passenger agent at Hongkong (China), becoming general passenger agent there the same year. In 1925, he returned to Canada as assistant general passenger agent at Montreal, the position he held until his recent appointment.

Engineering, Maintenance of Way and Signaling

R. R. Tiley has been appointed engineer maintenance of way of the Cumberland & Pennsylvania, with headquarters at Cumberland, Md., succeeding **W. Claus**, who has been promoted to general manager.

A. H. Woerner, division engineer of the St. Louis division of the Baltimore & Ohio, at Washington, Ind., has been transferred to the Chicago division at Garrett, Ind., succeeding **F. D. Batchelor**, who has been transferred to the Newark division at Newark, Ohio. Mr. Batchelor replaces **R. W. Gabriel**, who has been transferred to the St. Louis division, where he succeeds Mr. Woerner.

W. Fields, office engineer of the Gulf Coast Lines and the International Great Northern, with headquarters at Houston, Tex., has been appointed division engineer on the latter road at San Antonio, Tex. **H. L. Friend**, of the construction department of the Missouri Pacific at St. Louis, Mo., has been appointed assistant engineer on the Gulf Coast Lines at De Quincy, La.

Mechanical

W. P. Bickley, assistant master mechanic on the Pennsylvania at Altoona, Pa., has been promoted to master mechanic of the Buffalo division at Olean, N. Y.

A. C. Reeves, general foreman at the West shop of the St. Louis-San Francisco at Springfield, Mo., has been promoted to superintendent of that shop.

C. M. Darden, assistant superintendent of machinery of the Nashville, Chattanooga & St. Louis at Nashville, Tenn., has been appointed superintendent of machinery, with headquarters at the same place, succeeding **J. J. Sullivan**, who has retired.

E. R. Battley has been promoted to assistant general superintendent of the motive power and car department of the Canadian National, with headquarters at Toronto, Ont., and **J. H. McAlpine**, superintendent of motive power at North Bay, Ont., will succeed him as superintendent of motive power in the Montreal district.

John R. Sexton, who retired on April 1 as mechanical superintendent of the Northern district of the Western lines of the Atchison, Topeka & Santa Fe, with headquarters at La Junta, Colo., has been in railway service for 49 years.

He was born at Iowa City, Iowa, on April 5, 1863, and gained his first railroad experience at the age of 15 years as a machinist apprentice on the Chicago, Burlington & Quincy at Plattsmouth, Neb. After completing his apprenticeship he was employed for two years as machinist on several roads, then returning to the Burlington in the same capacity in 1885. Later he was advanced to gang foreman and to division foreman and in 1901 and 1902 he served on the Great Northern at Devils Lake, N. D. In the latter year he was appointed general shop foreman of the Union Pacific at Cheyenne, Wyo., then being appointed general foreman on the Santa Fe at Cleburne, Tex. Mr. Sexton was promoted to master mechanic at Fort Madison, Iowa, in 1910 and to mechanical superintendent at La Junta on June 1, 1912.

Purchases and Stores

H. P. Buchenery, division storekeeper on the Southern Pacific at Tucson, Ariz., has been promoted to stationery storekeeper at West Oakland, Cal., succeeding **V. R. Plank**, who died on March 2.

M. E. Bailie, district storekeeper on the Missouri Pacific at St. Louis, Mo., has been appointed assistant supply agent, with headquarters at the same point. **Charles Williams** has been appointed district storekeeper at St. Louis, succeeding Mr. Bailie.

The jurisdiction of **C. B. Sauls**, division storekeeper on the Illinois Central at McComb, Miss., has been extended to include all material heretofore handled by the New Orleans (La.) storehouse, following the abolishment of the position of division storekeeper at the latter point.

A. E. Owen has been appointed assistant purchasing agent of the Pennsylvania at Philadelphia, Pa., and **George H. Schultz**, assistant fuel purchasing agent at Philadelphia, will succeed him as assistant purchasing agent at Chicago. **W. N. Kuhn**, assistant purchasing agent, has been appointed assistant fuel purchasing agent at Philadelphia.

Special

S. W. Fairweather, assistant director of the Department of Economics of the Canadian National, has been appointed director of the Bureau of Economics.

Obituary

A. E. Weymouth, general agent for the Southern Pacific at Corpus Christi Tex., died at Waco, Tex., on March 7, after a year's illness.

John A. Gude, principal assistant engineer of the Southern Pacific lines in Texas and Louisiana, with headquarters at Houston, Tex., died in the company hospital in that city on February 26.

Miguel Castillo, assistant to the superintendent of machinery and motive power,

National Railways of Mexico, with headquarters at Monterrey, N. L. Mexico, died on March 15 due to an acute attack of uremia.

James E. Lockwood, who retired as general passenger and ticket agent of the Kansas City, Fort Scott & Memphis when it was acquired by the St. Louis-San Francisco in 1901, died at his home at Kansas City, Mo., on April 4 at the age of 84 years. Mr. Lockwood was born at Pleasant Valley, N. Y., and entered railway service in 1869 as a clerk in the freight department of the Missouri River, Fort Scott & Memphis (now part of the Frisco). He acted as general passenger and ticket agent of the K.C., F. S. & M., with headquarters at Kansas City, from 1875 to 1901.

David W. Horsburgh, who retired as auditor of freight accounts of the Southern Pacific, with headquarters at San Francisco, Cal., in 1912, died in that city on March 7 at the age of 84 years. Mr. Horsburgh had served as auditor of freight accounts of the Central Pacific and the Southern Pacific for 26 years.

Homer J. Jackson, general freight and passenger agent and assistant treasurer of the New Jersey, Indiana & Illinois, with headquarters at South Bend, Ind., died at his home in that city on April 11 following a two weeks' illness from a throat infection. Mr. Jackson was 61 years of age and a native of Pine Grove, Mich. He entered railway service as a telegraph operator on the Cleveland, Cincinnati, Chicago & St. Louis in 1892 and in 1895 he became agent for the Wabash at North Liberty, Ind. In 1912 Mr. Jackson entered the service of the New Jersey, Indiana & Illinois as agent at South Bend. Since that time he had been successively commercial agent, general freight and passenger agent and assistant treasurer.

James B. Kerr, of Carey & Kerr, Portland, Ore., general counsel for the Spokane, Portland & Seattle, attorneys for Oregon for the Great Northern and counsel for the Northern Pacific, died at St. Vincent's hospital at Portland on March 26 after a three-day illness from pneumonia. Mr. Kerr was born at Beloit, Wis., on September 28, 1867, graduated from the University of Wisconsin in 1889, and received a master's degree in 1890 and a law degree in 1892. In the same year he was admitted to the bar and in 1897 he was appointed general land attorney for the Northern Pacific at St. Paul, Minn., being promoted to assistant general attorney in 1902. Mr. Kerr moved to Portland in 1907, where he formed the law firm of Carey and Kerr and was appointed general counsel for the S., P. & S., and local counsel for the Northern Pacific. For the past five years he has spent a large amount of time in the railroad's interest in the Northern Pacific land grant controversy with the federal government. Mr. Kerr was a man of many civic interests aside from those directly involving his law practice. As a member of a special commission he helped draft the Oregon workmen's compensation act which was enacted in 1913.